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ACCOUNTING SYSTEMS

PRINCIPLES AND PROBLEMS OF INSTALLATION

BY

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To My Good Friend

STEPHEN W. GILMAN

To whom I owe my faith in accountancy,
this book is affectionately dedicated.

PREFACE

Accounting Systems: Principles and Problems of Installation attempts a non-technical presentation of numerous principles of constructive accounting. Experience has been drawn upon to show the reader and student a variety of situations and problems confronted by the system accountant in his daily labors.

Abstract general principles are curtailed vigorously, inasmuch as a host of elementary treatises cover this subject-matter in detail. But since numerous readers and students are not familiar with any of these texts, and since many of the others in commencing a course in "System Building" (or whatever the title may be) are in serious need of reviewing these general principles prior to attempting any problem work in connection therewith, certain fundamental matters must be discussed; otherwise, this portion of the present text would have been omitted entirely.

The books already published on accounting systems for the most part relate to such exceptional activities as railroads, life and fire insurance companies, banks and trust companies, building and loan associations, and so forth. Although considerable knowledge is to be gained from a study of such systems, the writer has attempted to break new ground by discussing the subject-matter from the view-point of the average trading, service, and manufacturing activities of small and moderate size. The major portion of this book has been constructed around actual situations which, although not of the largest type, are the every-day representatives of those concerns with which the great majority of students will become associated and in which many of them must become acquainted with the work of more than one book or department.

It would be folly to claim that a concentrated study of

subject-matter alone will make one an expert on accounting systems; only years of experience, coupled with careful study, can do that. But study augmented with laboratory practice of the proper sort ought to bear fruit in crystallizing in tangible form the principles of this portion of accounting science. With intelligent guidance on the part of the teacher, considerable proficiency should be attained in understanding the system requirements of a small or moderate-sized trading, service, or manufacturing concern.

Some may criticize adversely a portion or all of the systems commented upon because they represent actual situations which may or may not be defective. Nevertheless, it is believed that being shown how things *are* done in the light of one's knowledge of what, theoretically, may be done, results in a better practical knowledge of subject-matter than otherwise. Of all the accounting courses now included in the curriculum of the modern college of business administration, none can be given more of a practical slant than that concerned with system building. The following comment, advanced at a meeting of accountants by a practitioner with years of experience, corroborates this view:

> In these meetings, extending over a period of some two years, nothing has been said except as to how things should be done. More help and assistance will be obtainable if we exchange experiences as to how things actually are done. A certain theory may be accepted as good practice, yet in a given situation such theory may be impossible of application, or at least highly undesirable, under the circumstances.

In preparing the practice work, the following objectives were uppermost:

1. To create a professional atmosphere which will cause one not to criticize a given system situation except constructively, realizing fully that, of necessity, differences of opinion must exist in the satisfactory solution of a problem;
2. To encourage one to do some original constructive thinking;
3. To enable one to apply in practice, with some degree of success, the underlying principles taken up.

In connection with that part of this text which reviews briefly certain principles of accounting, as a basis for work of a more specific character, a number of theory questions have been included. In later chapters, a dearth of these questions is noticed, due to the desire to have the student concentrate fully upon the problem work. Experience has demonstrated that even under the best of conditions, only a relatively small number of problems can be solved in the course of a year; by avoiding the expenditure of valuable time in mere theoretical discussion, a practical comprehension of subject-matter is emphasized rather than a mere theoretical one. The ability to discuss certain theories has its place in an accounting course, but this in no sense marks one as able to outline even a simple system calling for the application of these theories. It is perfectly logical and necessary to discuss the why and the wherefore of a certain contemplated procedure applying to a definite case, to prove or disprove its workability under the circumstances; but to argue for the sake of theory alone, particularly in a course of this character, is utterly useless.

Considerable hesitation was experienced in reaching a decision calling for the inclusion of forms in this book. Some years ago, John R. Wildman, C.P.A., made a remark couched about as follows:

> Having determined the subject for which a form was needed and considering the use to which it was to be put, it is only necessary to make the form, through its construction and arrangement, call for the information desired. Experience teaches one that a knowledge of what a form should recite is of vastly more value than familiarity with any particular form.

Experience has demonstrated the truth of the above—that the inclusion of forms is necessary only because of their theoretical importance. In a course which, to a large extent, is taken by students who have had little or no experience, the lack of samples from which to secure tangible ideas apparently works a hardship, in that a large amount of time is lost by not knowing where to begin and how to proceed.

It must be borne in mind that the students should not be given the impression that the identical forms included in the text for illustrative purposes should be used in their problem solutions. Further, it is not difficult to determine that the list of forms offered is incomplete; one may have a trunk full of them and still not be in possession of a complete collection. Also, it is recognized that any form is subject to criticism, if the object of the critic is but to find fault; nevertheless, the hope is expressed that those which have been included are representative for the purposes for which intended.

In attempting to express the writer's obligations for suggestions and criticisms, considerable hesitation is felt, because of the impossibility of including a complete list of all persons and concerns that have directly or indirectly contributed to the subject-matter of this book. The names of specific concerns in which particular systems are in operation of necessity cannot be mentioned, and numerous persons have asked specifically that their rightful names be withheld. Thankful acknowledgment again is made to all, and the desire is expressed that the crystallization of the ideas shown upon the printed page may prove of value to those who are endeavoring to be of service in this field.

GEORGE E. BENNETT

Syracuse, New York, December 1, 1925

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ACCOUNTING SYSTEMS

PRINCIPLES AND PROBLEMS OF INSTALLATION

I

INTRODUCTION

Definitions. Fundamental view-point. Personnel. Justification for a system's existence. Standardized systems. Cost of clerical effort. Steps in system design. Problem approach. Departmentalization. Modern devices. Completeness of initial installation. Obsolete new systems. Conclusion.

BOOKKEEPING records business transactions in Journals and Ledgers. Accounting analyzes and interprets these records. Hence, it is the bookkeeper who compiles data for the accountant. The terms "bookkeeping" and "accounting," therefore, are not synonymous. But as a practical proposition, it is not always possible to make the above sharp theoretical distinction or separation, since frequently the bookkeeper acts as the accountant; in general, it is only in a business that is at least of fair proportions that the fields of bookkeeping and accounting are rather sharply defined.

Bookkeeping may produce a record which is accurate, but without the influence of accounting—the science which establishes the principles upon which bookkeeping is based—this record may not be desirable. Knowing what is wanted or needed in the way of business information through the application or influence of accounting, the bookkeeping procedures may be so adjusted that eventually a true informative story of business activities is forthcoming.

The accountant outlines the forms of the various records in which the bookkeeper makes his entries. He installs new systems of accounting, or revamps those already in use. He audits the bookkeeper's records. He prepares statements which will indicate to a proprietor the financial condition and progress of his business. He computes costs of manufacturing and of operation—sometimes departmentally—and it is upon his word that profits are stated as amounting to a cer-

tain sum for a fiscal period. It is his function to uncover leakages and to give his opinion as to how profits may be increased.

By itself, accounting will not cause business expansion. But the statistical comparisons which should be available as a result of its use, and the wastes and errors that should be uncovered thereby, will permit the management to know just where it stands relative to profits; this being evident, proper action may be taken to promote progress.

It was noticed above that the accountant "installs new systems of accounting, or revamps those already in use." It is in connection with this phase of his work that this book is concerned.

The term "system" may be defined for present purposes as an orderly arrangement of parts or elements into a complete whole or fabric. With this definition as a basis, an accounting system may be looked upon as a set of records and related procedures so coordinated that the variegated transactions of a business are shown properly in detail as they occur. Such data are compiled or summarized under appropriate classifications, called accounts, which when set out in the form of various statements will permit the management to secure therefrom reliable information on such matters as have been suggested previously.

An erroneous idea is prevalent in many quarters that an accounting system is a method of doing some one thing—as that of keeping the accounts or vouchers payable, of posting, and so forth. A method of doing some one thing cannot be considered as being similar to a plan and a procedure related to an entire business.

An accounting system should be viewed merely as a means to certain ends. The management of a business, for example, either desires or needs certain information. On the one hand, the accountant engaged in constructive work—the constructive accountant or system accountant—is given but little latitude, being instructed to do only certain things desired by the management. On the other hand, he may be

commissioned to go ahead and do whatever is necessary.

In carrying out an assignment, such matters as the following should be kept in mind: In the handling of the common daily transactions, speed is desired; delays should be looked upon as unnecessary and subject to censure; possible errors should be kept at a minimum, and the amount of clerical effort entailed in operating a system, likewise, should be as small as possible; whatever the system, it should facilitate the making of an annual or more frequent audit.

FUNDAMENTAL VIEW-POINT

The owner of a country dry-goods store may become enthusiastic over the accounting system in operation in a large city department store. But such fact, alone, is not sufficient to justify copying the complicated system of the larger enterprise for introduction into the smaller establishment. Investigation would prove that since the physical situation of the smaller concern is not at all comparable to that of the larger one, the desired system is not at all adaptable to the small-town situation. But even assuming that the complicated system of the large city department store actually is adaptable to the country emporium, the installation in the latter situation might prove decidedly impracticable. For example, the system in contemplation will require more help than is now employed. An accountant may believe this to be entirely desirable, and yet if the store proprietor is opposed to the increased expense, nothing can be done but to drop the matter and approach the problem from another angle.

Again, it may be found that a store owner lacks the intelligence necessary to appreciate the possibilities of a desirable change in the old order of things. Particularly is this true where the present system is the product of the proprietor's ingenuity and a source of pride and satisfaction to him; to cast reflections upon such a system undoubtedly would cause the eventual loss of the case.

PERSONNEL

Like conditions will not produce like results even if there be eliminated from all consideration the elements of material, labor, and expense. Inasmuch as accounting must be supervised and carried on by human beings, and since these individuals are a most variable factor, it is the human element that prohibits accounting from being an exact science. In other words, the workableness of accounting procedures is influenced to a marked degree by opinion and by errors of execution.

The professional constructive accountant of experience beyond doubt can lay out a system which, theoretically, is a work of art and beauty, providing for all the control features any one could possibly desire. But assuming that such a system has been installed, how long is it apt to be before things get awry? In most cases, not very long. And the underlying reason in most instances is that where theory stops and practice commences, the human element has not been accorded the proper amount of deference.

Under the usual situation, as soon as a system has been installed by a professional constructor, the latter departs. From that point on, the staff personnel gets in its work toward discrediting what has been done. It is believed that considerable success in combating the human equation would result if the installing accountant would take the trouble to keep in touch with his case.

If the management heads do not possess executive ability, and there are many of this type, it must necessarily be most discouraging to attempt an installation which inclines toward an efficient operation of the organization but which is looked upon as more or less of a nuisance by them. Some executives, in fact, are so hopeless that no accounting plan—however good it may be—can help them. And it would be the unusual circumstance for the system accountant to be so situated on the case as to be in a position to recommend the dismissal of these incompetents.

Again, it is the employee personnel that constitutes a factor of no slight importance—the big portion of the human element referred to above. Regardless of whether the system is to be installed in a new establishment, or in one which has been in existence a number of years, both ignorance and carelessness will be encountered. And in connection with the former condition, more particularly, is the accountant apt to encounter opposition of the employees toward his efforts.

Ignorance and carelessness may be overcome eventually in some situations and, again, they may not without drastic action. If encountered in one person, for example, the case is probably hopeless so far as this person is concerned; about the only thing that can be done is to have him assigned some other duties in which he will be harmless to the system, but if this cannot be accomplished, then the last resort is to drop him from the pay-roll. In a new company, great care should be used in selecting employees, whereas in an established proposition it is necessary to make the best of the persons already on the ground.

If a man is of average intelligence, ignorance can be overcome provided he is willing to receive instruction. Carelessness, also, frequently may be overcome. The first time a mistake is made, it may be due to ignorance; the second time the same mistake is made, assuming that the first one has been corrected, it is undoubtedly due to carelessness and should be dealt with severely, at times even to the point of having the guilty party discharged on the spot.

Because of the possible change in the mental capacity of an office staff, a system that is working nicely when first installed may not function at all satisfactorily at a later date due to a change in personnel. Also, a small force, mentally alert, may do more work than a group twice the size composed of persons more or less incompetent, or of friends and relatives of the management. Time and again one will encounter some employee who is absolutely hopeless, but, upon careful inquiry, the information is forthcoming that nothing can be done, because he is a relative of Mr. So and So.

JUSTIFICATION FOR A SYSTEM'S EXISTENCE

Since the expense of operating a system is reflected in the net profit figure, the right of its existence should be dependent upon whether such expense earns, or does not earn, a profit—a profit should be forthcoming from this end just as surely as it is presumed to be forthcoming from the active producing departments. In other words, regardless of kind, an accounting system justifies its existence:

1. If it is of assistance to the management in having operations conducted with the greatest amount of economy possible;
2. If it is of assistance in the development of an efficient sales policy—as by furnishing an incentive for higher prices and for concentrating upon the more profitable products;
3. If it aids the management in determining what shall be the financial and general policies.

In functioning informatively, an accounting system should bring to the operating executives only the facts that each must know so as to do his work with the most effectiveness —not a bit more, and not a bit less. The exact form in which this information reaches each executive is not a matter of great importance, so long as the facts are made available when they are "hot"—not six weeks thereafter.

Again, if a system is efficient, it should bring to the attention of each executive the vital facts of operation of interest to him, in the order of their importance. If this is true, then no matter how busy an executive may be, his time will be spent profitably in scrutinizing the important facts; otherwise, page after page of unimportant detail must be perused, entailing a wondrous waste of time. And in connection with this idea, further, the design should be such that when anything goes wrong, the fact will show up so prominently that it cannot be overlooked; to this end, it is most essential that the information passed along regularly to each executive be boiled down to the fewest possible figures.

To recapitulate as to a system's effectiveness, the following is offered:

1. It should be economical in material and in labor;
2. All who use it should comprehend its features easily;
3. Operating conditions should be reflected accurately;
4. Matters should be emphasized in the order of their importance;
5. Facts should be brought to the attention of executives promptly enough to rectify operation faults;
6. These facts should be presented with due regard to the time the executives have at their disposal;
7. It should be so planned that when executive decision is necessary, the need therefor will be presented forcibly.

A system which meets the above requirements, regardless of its simplicity or elaborateness—in the opinion of the writer—is a good system, one which can play a vital part in the game of creating net profits.

STANDARDIZED SYSTEMS

A successful accounting system is one evolved for the particular requirements of the business in which it is operated. Hence, it is impossible to state that a proper informative system should be either simple or elaborate—the existing circumstances govern. As a general rule, it may be said that extreme care should be observed not to attempt to revamp a business to dovetail with the proposed system—the system should be shaped to the business. It is said that there is an exception to every rule; in the present instance this is true. Infrequently, the constructive accountant is confronted by a case in which he may fully feel that there is much joy in labor. Hereunder, he finds himself in the advantageous position of being permitted to criticize and correct the organization to his heart's desire before he installs the system; under such a situation, in one sense, he is adapting the business to the system.

One is willing to grant that the principles of good accounting now are fairly standardized. Yet it is grossly in error to assume that their application likewise resolves it-

self into a standardized procedure. For this reason, ready-made systems are a poor investment. It is really to be deplored that business executives are influenced so easily by representatives of concerns that have standardized systems to install regardless of efficiency or economy.

The question arises naturally at this point as to the attitude to adopt toward the numerous standardized systems worked out during the past few years by various trade associations, regulatory bodies, and certain governmental departments. Because of the public interest in the operation of public utility companies, the law has laid down a more or less rigid "General Ledger" classification of operating accounts, with rules for their operation and treatment. One underlying idea here seems to be that it is preferable to show up operating results according to a standard plan which will produce some tangible information rather than to have these companies so manipulate their accounts that the public will be charged rates productive of excessive profits. Again, as in every line of business activity, there are numerous concerns which are too poor, or in which the management is too ignorant, to have anything that approaches fair accounting, if left to themselves.

The systems developed by trade associations for the use of members may be utilized to advantage and, again, they may be disastrous, at least from the system view-point. Some of these systems apparently have been worked out to cover every little feature of every sized concern with instructions that state that each feature should be handled thus and so. If a business should follow blindly one of these systems without regard to its own eccentricities, probably as much criticism could be advanced as would be the case if it were some "canned" affair offered for sale by a system concern. At least, unnecessary expense would result, losses of various kinds would occur, and the operation of the plant, of necessity, would be hampered.

On the other hand, a standardized system which outlines its procedures in a general way, and recognizes the fact that

one concern will differ from another in the same line of business, may be a blessing, provided some one of experience is available for supervising its installation.

A large number of systems are considerably similar in form, but yet each, when properly constructed, will differ from every other one in a number of details. Hence, if the organization of a number of businesses is fairly similar and, say, their problems of production and of distribution also are presumably cut from the same pattern, the same accounting system will suffice, provided the proper alterations and adjustments are made for each unit involved to take care of the varying differences in the problems that must be solved for each concern.

COST OF CLERICAL EFFORT

The average systematizer is prone to prescribe elaborate forms without giving scarcely any thought to their cost—both in stationery and in the clerical staff rendered necessary. The cost of stationery is probably a small item, and yet no reason exists for having a collection of more or less useless forms ruled up. In a small business, for example, the expenditure of $50 for a specially ruled record frequently is a serious matter.

But what is more important for careful study than the cost of stationery—this being a cost of infrequent importance—is the cost of clerical effort. In this connection, the error may be just as serious in curtailing such costs beyond reasonable limits as in giving practically no attention thereto. The fetish efficiency practice of cutting labor costs frequently causes the rise of grave dangers which are overlooked or unsuspected by the instigators thereof.

From the very beginning, the question of the cost of increased clerical help or of help auxiliary thereto is most apt to cause the conscientious accountant some troublesome moments. Just how far should he go to secure the largest possible results at a minimum cost?

It is natural to avoid using more clerks than seems absolutely necessary, but too often he is apt to err by deceiving himself that he will need a lesser number than the facts actually justify. In every organization, a certain amount of clerical work must be performed, and this must be paid for regardless of whether or not the pay-roll will show a separate item to cover. It is reasonable to assume that the most expensive manner of having the requisite clerical work done is to require the various executives to do it at odd times between the carrying out of their separate responsible duties. It is altogether too common an occurrence to find the lesser executives so loaded down with these extra duties that their real jobs suffer severely as a result.

Frequently, the chief executive becomes most antagonistic when he observes that more clerks are necessary after the accounting has been reorganized than formerly. Instead of barking at the supposedly increased cost entailed, he ought to remember that an efficient accountant undoubtedly has only taken away such clerical work from the highly paid men and has parcelled it out to particular persons who have had the proper training, and who can do it not only more quickly and efficiently, but at an actual saving. The executive has probably failed to realize that there is now no more clerical work than formerly, but that it is being done by cheap help rather than by the more highly paid persons to whom such duties are a source of worry, and the basis of internal discontent and dissension.

In relation to the above, all elements should be in harmonious proportion to each other. The clerical staff should be of a size sufficient to provide a smooth-running organism without being, however, topheavy. A certain economic limit exists beyond which the law of diminishing returns applies with marked force. In this connection, it would seem that no cognizance should be taken of the previously existing situation, since generally what was done in the past was responsible for a condition which could be described briefly as one that was highly inefficient.

STEPS IN SYSTEM DESIGN

Theoretically, a clear-cut sequence of operations, or procedure steps, may be indicated for the design of a system; practically, however, distinct lines of demarcation or separation do not occur, since the constructive accountant must keep in mind at one time a number of different relationships of these steps to each other. For example, in developing the chart or code of accounts, one must keep actively in the background the various Ledgers that might be used and the columnar rulings of many of the Journals. But for purposes of orientation, the following outline is suggested:

1. Survey of the problem situation;
2. Study of the problem situation and preparation of procedure plan;
3. Development of the chart of accounts;
4. Preparation of forms of Journals, Ledgers, statements, and auxiliary papers, including instructions for printing, ruling, and binding;
5. Preparation of report, including instructions of system operation. In some cases, one report will cover everything; in others, separate reports will be rendered—as one covering the general situation and another the instructions to the bookkeeper. Fundamentally, the above may be subdivided along the following lines:
   (*a*) Code of accounts with functions;
   (*b*) Instructions on operating the system—use of records and procedures;
   (*c*) Mechanical devices and other accessories of various types.

In a new concern, it may be assumed that all of the above steps are necessary; but where only certain features of an existing system are to be revamped, probably not all will be used. The constructive accountant, before going too far into the work, should know just what is to be accomplished, and just what persons are available for operating the system established. Otherwise, the system, theoretically, may be perfect, whereas, practically, it is a failure.

PROBLEM APPROACH

Many problems are best approached from a contemplation of the information uncovered by a complete audit. Fundamentally, such an audit should disclose:

1. The adequacy or inadequacy of the accounting methods in use;
2. The present usefulness of the statistics being compiled currently for managerial use and control;
3. The completeness and accuracy of the make-up of the statements now prepared—as Balance Sheet, Profit and Loss Statement, Statement of Cost of Manufacture and Cost of Manufactured Product Sold.

The system accountant must be familiar with auditing requirements, if he expects to be continuously successful, for if these are not thoroughly understood, it is impossible to design a system which may be audited readily.

Not only should the general accounting plan be subjected to careful scrutiny, but the following lines of investigation may be taken up with profit, this being dependent, however, upon whether a concern is of a trading or of a manufacturing nature:

1. Planning
2. Production
3. Cost accounting
4. Sales policies
5. Financial policies

In the case of a manufacturing concern, the problems related to planning, production, and cost accounting are many and of vital import. Although some may say that these fall within the province of an industrial engineer (an engineer who applies methods presumably scientific to industrial organization and management) rather than within that of an accountant, experience has demonstrated that the accountant is the logical one to solve them. Although the engineer may be called upon to determine the best method of doing a certain thing, or of handling a process, the expression of

these in dollars-and-cents results, and in statistical conclusions, ought to fall within the province of an accountant. If the latter is ignorant of manufacturing technique, either he should secure this knowledge or he should not attempt to impose himself upon the public as one capable of installing systems.

Although it is generally said that where a cost system is in operation, failure to investigate this painstakingly makes the entire examination practically worthless—regardless of how much attention has been given to the general accounting plan—it would seem that such a statement is too strong to be accepted as a general rule. Take the simple case, for example, where a factory is located some miles distant from its main office. It would seem perfectly feasible and proper to accept a case here, calling for the installation of a general financial system to be installed more or less independently of a cost system. And then, again, it is always possible to consider the factory, regardless of its location, as a separate branch proposition, calling for no factory accounts—except that of one factory control—upon the general books. As a matter of fact, wherever possible, the writer always has advocated this divorce of the factory accounts from the general ones—if for no other reason than to avoid as much confusion as possible on the part of the general office staff, few members of which have much knowledge of costs.

DEPARTMENTALIZATION

The character of a business is a most important factor to be considered, since its nature will indicate what matters should be provided for, and this, in turn, will enable the systematizer to formulate a definite idea of the books and procedures desirable. In a trading business, for example, whether retail or wholesale, purchases and sales are made; and in connection with sales, a delivery activity probably is found. Hence, books and procedures for purchases and sales must be provided for, and also, those which are common to

every business related to the administration and to the financial features—Cash Books, Journals, Ledgers. Further, these variations give rise to the departmental plan which, in general, may be indicated as: Purchasing, Selling and Distributing, and Administration.

On the other hand, a manufacturing business purchases raw materials and supplies, fabricates a product, and sells (or ships to agents who undertake the sales function). Hereunder, books and procedures for purchases and sales (or shipments) must be provided for as in a trading enterprise, others related to pay-rolls, in process operations, and then those which are common to every business—concerned with cash and the General Journal and Ledger. These variations give rise to the same fundamental departmental plan, except that a new function must be provided for—manufacturing—Purchasing, Manufacturing, Selling and Distributing, Administration.

Regardless of the usual type of enterprise encountered, the above standard layouts may be utilized as a point of commencement (or similar ones), and variations made therefrom as the circumstances justify. Purchasing, in the above set-out, includes "receiving"; in some cases, receiving may be considered separately therefrom.

MODERN DEVICES

The system accountant should utilize these wherever possible, to lessen the clerical labor of handling a volume of figures. The following brief summary is offered in this connection:

1. Forms and arrangements of accounting records. When used to the fullest extent, modern bookkeeping resolves itself largely into a summarized proposition, producing totals under various captions without the necessity of having detailed Ledger postings;
2. Mechanical devices or machinery. Inasmuch as this book has not been written to advertise any particular line or lines of devices or machinery which are now on the market, defi-

nite suggestions relative thereto cannot be given. The suggestion is made, however, that the advertising literature issued by the manufacturers of such contrivances frequently is worth study and, whenever possible, advantage should be taken of the opportunity to witness actual demonstrations of these devices. Briefly, the following subdivision of these articles is offered:

(*a*) Manifolding devices for records which are to be written;

(*b*) Filing devices;

(*c*) Calculating and tabulating machines:

(1) Some of these perform ordinary calculations;

(2) Others make computations which, if performed mentally, would consume an unwarranted amount of time;

(3) Some combine a calculating device with a typewriter;

(4) Some are decidedly useful in compiling statistics.

COMPLETENESS OF INITIAL INSTALLATION

The rapidity of introducing new methods depends upon the size and character of the particular establishment. In a small business, a new system may be introduced at once or in the course of a few days. In a large concern, the installation may extend over a number of months, at times consuming two or more years. In one case, the accountant probably will succeed just as well without giving any thought in advance to a definite line of attack, whereas in another situation a definite plan must be formulated before commencing any portion of the actual work. Although the constructive accountant does complete his work within a reasonable length of time, it should be remembered that everything is not finished upon his departure. The best system possible for a given case cannot run itself. The management must be made to realize that continued effort is necessary on its part in order that the contemplated results may actually be secured through the new order of things. But as intimated previously, the accountant should do his utmost to keep in

touch with the establishment so as to render advice and service from time to time.

In the event that a cost system is to be installed as well as one relating to the general accounting, it may be propitious to commence, first, with the general accounting scheme. After this has been operated sufficiently long so that it runs smoothly, portions of the cost system should go in from time to time, a sufficient interval elapsing between each introduction to permit of everything installed to date operating efficiently as contemplated.

OBSOLETE NEW SYSTEMS

One problem of considerable importance which must be faced is the fact that, regardless of how much care may be expended in installing the right kind of a system, the latter constantly tends to get out of harmony with existing conditions. Personnel changes constantly, business methods change, new wants arise and former ones become unnecessary. Since it is absolutely impossible for a system to adjust itself automatically to the above factors, it seems absurd to maintain that any system is of perpetual application.

When a system is properly installed, it gives expression at that time to a definite set of relations; if these latter change even slightly, it becomes a less perfect expression of functional relationships than formerly. Every business alive from the neck upwards, always is in a state of flux. The attempts made from time to time to adjust the shortcomings of a system that is getting away from actual conditions result in a patch-quilt organism in which perhaps all of the parts long since have lost the well-defined and balanced relations which they had when first installed.

The regular audit of a business by competent practitioners should uncover these shortcomings; knowing what these are, the proper adjustments may be made. It is poor policy to hire an auditor who is but a mere checker of figures.

CONCLUSION

An attempt has been made above to present rapidly some of the matters and problems which commonly confront the constructive accountant upon a case. It has been emphasized that these cannot be solved by any standard procedure if one is eventually to be successful in this kind of work; new ways continually must be developed to surmount the many difficulties with which one is confronted.

A glance at the table of contents of this book shows that the subject-matter has been divided into the following groups:

1. *General theory.* Hereunder, numerous working principles of constructive accounting are presented, a knowledge of which is essential in order to appreciate that which follows. To a considerable extent, these principles are fairly standardized; they represent the foundation or groundwork.

2. *Internal check and the scheme of organization.* In this division are encountered a second group of principles. Although primarily of an auditing nature, these principles incline toward the approach that must be made to a problem. Developed upon a general background of constructive theory, the two groups together give one the working tools.

3. *Representative trading activity problems.* The ordinary problems encountered by the constructive accountant in his daily work, unless he is a specialist along peculiar lines, have been grouped into three divisions, of which trading is the first. Some readers may ask why only three chapters are included when many others could have been added. Truly, one could go on and on indefinitely so far as actual cases are concerned, provided space was available. Because of the great variety of possibilities, and since the available space is limited, Chapters XII-XIII form what is presumed to be a more or less standardized retailing system adjustable to a wide variety of circumstances. Some years ago, the A. W. Shaw Company developed a course in retailing, a considerable portion of which was devoted to accounting procedures.[1] These two chapters have been written with certain parts of this course as a basis. Inasmuch as numerous retailing concerns sell commodities on

[1] *Retail Merchandising.*

a commission basis, whereas numerous other establishments sell wholly on commission, it was deemed advisable to include in this division of the book a separate chapter on a simple system for a commission business, which may be adapted to either situation mentioned above. It is believed that these three chapters cover the trading possibilities adequately.

4. *Representative service activity problems.* Since numerous activities sell services rather than goods, it is only fair to present a few representative cases of this type. Others could have been included if space permitted. It is believed that the selection made is illustrative.

5. *Representative manufacturing activity problems.* Hereunder, considerable difficulty was experienced in deciding upon what types of activity should be included. Finally, the conclusion was reached that the process, specific order, and estimated costs would be representative, inasmuch as these three variations conform to the usual differentiation made in types of cost systems. The last case was included to illustrate a fairly complicated situation.

As mentioned in the preface, the problem chapters have been constructed around actual cases. Probably none of these chapters would be considered by an experienced accountant as illustrating a perfect system. But it is in connection with this feature that it is believed the greatest benefit can be derived by the student. Based upon his knowledge of what has gone before, let him criticize constructively each portion of the content of each such chapter, and then for laboratory practice during the term, let him tackle two or three of the problems included for that purpose.

The more knowledge that is acquired of such subjects as economics, finance, marketing, management, mathematics, and human nature, the more rapidly will one advance toward the goal of being an efficient, constructive accountant. Inasmuch as the students in a class cannot be taken out and placed in offices to acquire experience, the nearest approach is to bring some of the problems to the classroom and there work upon them. But without careful guidance, beneficial results from this work are minimized.

Test Questions

Prepare answers in writing for the following questions. Be specific; make every word count:

1. Distinguish between the underlying principles of partnership accounting and those of corporation accounting.

2. What deductions may be safely drawn from a Trial Balance representing intrinsic values and true economic history of the transactions of a given period?

3. Enumerate the steps you would take to adjust an incorrect Trial Balance which a bookkeeper cannot agree with his books.

4. What particular accounts in a mercantile business would you investigate to see that all entries had been made before ascertaining the correct profit and loss thereof? In a manufacturing business?

5. What important facts may one secure from a scrutiny of a Balance Sheet properly constructed?

6. Is strict accuracy as to facts possible in a Balance Sheet? Why?

7. What schedules should support a Balance Sheet? A Profit and Loss Statement?

8. Describe a situation under which the use of a few books will not result in system simplicity, whereas if the number of books currently operated were increased, considerable simplicity would follow.

9. You are hired as the bookkeeper of a firm whose books of account are very imperfect. Indicate definitely the procedure you would follow in taking charge of this set of records.

10. You are a bookkeeper of a firm which operates without written articles of copartnership. One partner dies. Outline your duties upon learning of his death.

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II

THEORY OF RECORD EXPANSION

Introduction. Classification of books and records. Record form and ruling. System elements. Columnar Journal. Use of separate Journals. Cash Book. Purchase Book. Sales Book. General Journal. Columnization of separate Journals. Columnar Purchase Register. Columnar Sales Register. Columnar Cash Book. Columnar Petty Cash Book. Columnar General Journal. Relationship of columnization to control principles.

FINANCIAL transactions are recorded in books of account in the order of occurrence, in such a manner that the information is classified, summarized, and available for future study—in connection with the transaction of current business, the preparation of statements, and the protection of the interests of all parties concerned. The form, ruling, and general arrangement of records follow no prescribed rules, since each concern (except those supervised by governmental agencies) may choose the books and the method of bookkeeping it desires.

As business develops, there is an accompanying increase in the number of transactions; this, in turn, makes an analysis of transactions highly desirable—even necessary—if a comprehensive picture of results is to be secured. The simple means of entering transactions chronologically in some record, without regard to their nature, although theoretically correct, represents, from a practical point of view, a waste of time. To avoid this, it is noticed that modern treatment utilizes a series of special Journals in which transactions are classified as originally entered. And to further this development, the application of the columnization principle is noticed—the use of special columns which serve to classify transactions as they are entered originally. The columnization of records is one of the greatest principles of accounting

responsible for the remarkable growth and development of American system methods. The second great principle, to be noted in connection with Ledger development, is the utilization of the controlling account.

CLASSIFICATION OF BOOKS AND RECORDS

A Journal may be defined as an accounting record so arranged as to provide for the chronological entry of the financial transactions of a business. Theoretically, a Journal is considered as a book of original entry; in general, this is true, also, as a practical proposition, but the situation must be recognized that at times it will be found to advantage to make the Journal entries after the Ledgers have been posted up. This would be true, for example, where postings are made to customers' accounts directly from original sales tickets. Each such ticket is audited and then posted; subsequently, the tickets are sorted by classes and the Journal entries prepared.

A Ledger may be defined as an accounting record so arranged as to provide for a summary of the financial transactions of a business. From the system view-point, a comparison of a Journal and a Ledger reveals the fact that Journals usually record the details, whereas Ledgers summarize transactions.

Journals may be separated into two classes:

1. *General.* Usually, the General Journal contains the details of the accounts that are not used often, the opening and closing entries, transfers from one General Ledger account to another, and adjustments or corrections of accounts that have been posted.

2. *Special.* These are the various Journals, each of which contains the details of a group of currently used accounts, of which the transactions related thereto are fairly numerous. Special Journals may be separated further into two classes:

   (*a*) Simple ruling—as the one- and two-column Cash Book, the one- and two-column Purchase and Sales Books;

(*b*) Elaborate ruling. These are the various columnar Journals of all descriptions in which the details are classified and summarized so as to have the posting at a minimum.

Ledgers, also, may be divided into two classes:

1. *General.* The General Ledger contains the real and the nominal accounts (Balance Sheet and Profit and Loss accounts) in their most summarized form. Sometimes, the real accounts will be contained in one Ledger, and the nominal accounts in another; again, some of the nominal accounts—as selling and administrative groups—are found in one Ledger along with the Balance Sheet accounts, whereas the operating accounts that reflect, say, manufacturing, are carried in a second Ledger. Frequently, the use of a Private Ledger is desirable, in which case all accounts, regardless of nature, that it is presumed are of a private character, are carried in a separate book. The separation as between Ledgers is flexible.
2. *Subsidiary.* These Ledgers contain the details of certain groups or general accounts found upon the General Ledger, as:
   (*a*) Customers' Ledger
   (*b*) Creditors' Ledger
   (*c*) Machinery and Equipment Ledger
   (*d*) Stores Ledger
   (*e*) Capital Stock Ledger
   (*f*) Various Analysis Sheets which support in detail the total contained in some account on the General Ledger, as Sales (at times), Selling Expense, Administrative Expense, and so forth.
   (*g*) Factory Ledger
   (*h*) So forth, as desired

It is in connection with the use of subsidiary Ledgers that the controlling-account principle arises.

RECORD FORM AND RULING

Journals and Ledgers are both bound and loose-leaf (the latter including card forms). Inasmuch as considerable may be said in favor of, as well as against, both of these types, it would seem that the constructive accountant should

not be too enthusiastic about either kind. A complete set of records in loose-leaf form may be just as severely criticized at times as if the set were composed entirely of bound forms. As a rule, both types should be used.

Generally speaking, the General Journal, the General Cash Book, and the General Ledger should be bound, not loose-leaf. On the other hand, any detail record or subsidiary Ledger usually may be a loose-leaf form, inasmuch as herein considerable expansion must be provided for which cannot be estimated at all in advance—Customers' and Creditors' Ledgers are familiar examples. A variation in the loose-leaf record is noticed in the card file; frequently, a card file is considered highly satisfactory, as in the case of stores records and record of machinery and equipment.

Books are ruled in one of two possible ways—Ledger-ruled or Journal-ruled. The possible variations available in the market are too numerous to mention, as would be noticed by reference to the catalogs of various stationery concerns. As conditions change, the so-called "standard" ruling for Journals and Ledgers has been altered, but in altogether too many instances the new rulings represent merely an attempt to be different, or an attempt to place a competitive article upon the market.

Every one is familiar with the standard-ruled Ledger sheet. Here the page is separated vertically down the center by a double line which, about three-fourths of an inch from the top of the form, meets another double line running horizontally across the page. The vertical marking separates the account into the debit and credit portions, and in each such division are found similar vertical lines which provide the columns for date, explanation, folio, and money amounts. The General Ledger, usually, is always standard ruled.

Variations in standard are noticed more in the subsidiary Ledgers. These changes are grounded in the addition of columns to the standard form, in the shift in the position of the columns, or in a combination of these two. Beyond doubt, the three-column Ledger with the money columns at

the right of the sheet is the most popular subsidiary Ledger ruling in existence, rather than one that is more elaborate. Each account so ruled has its monetary columns arranged together at the right—debits, credits, balance. Nevertheless, particular conditions require special treatment, so that one should not assume that but two or three representative rulings are satisfactory for all cases encountered.

The General Journal has not had its ruling radically changed, General Journal entries are made in their original debit and credit form now as previously, the change in ruling merely being such that totals may be accumulated for posting to certain of the controlling accounts carried—those which are apt to have during a fiscal year a fair number of adjustment entries.

It is in the ruling of the various special Journals that have been developed from the original form that the greatest changes are noticed. In order that items may be classified at the time of entry so that a quick gathering together of monthly totals is possible, these Journals are so elaborately columned at times that it is difficult at first glance to determine whether they are Journals or something else.

It is possible, although usually not desirable, through the use of columns to produce a form of elaborate proportions which combines, and yet keeps separate, the various functions of the different Journals used. Such a form may be pleasing to look at, but unless the columns are kept down to a respectable number, the bookkeeper will find himself continually out of balance. One such record is the so-called Cash-Purchase-Sales-General-Journal; in this book, all of the distribution columns that are used, if the various Journals were kept separately, are found. From these columns, postings are made both in detail and in total as required.

Again, attempts have been made, from time to time, to introduce a system which for the main part consists of an elaborate columnar form containing the various Journal rulings as suggested in the last paragraph above, but which goes a step further and, by having a pair of columns for each

account, discards the Ledger entirely as a separate record. Each pair of columns is balanced monthly, the balances are brought down and these are considered as the account balances as of that moment. Naturally, it would have to be a most simple type of business requiring only a few accounts, with practically no customers or creditors, that could profitably think of using such a record.

As a general rule, except in the simplest of situations, these columnar forms mentioned in the last two paragraphs had better not be considered seriously with a view to adoption. It might happen that a bookkeeper is sufficiently accurate to keep such a form in balance—every sheet must be balanced, and all totals forwarded must be balanced before new entries are made—but observation in dozens of cases leads to the belief that a simple line-up of separate Journals and Ledgers is more desirable.

The use of columnar Journals permits securing monthly totals, and totals at the end of each accounting period, which are absolutely necessary to the establishment and maintenance of controlling accounts.

SYSTEM ELEMENTS

The standard two-column Journal and a Ledger to hold the postings therefrom compose a simple combination of records in which may be entered correctly the transactions of any business, regardless of their complexity. Such an elementary combination of books, in other words, reflects the essentials of a bookkeeping system under double-entry. Modern methods of account keeping, however highly developed, in so far as the double-entry records are concerned, contemplate merely the expansion of these two basic books into others, and the addition and rearrangement of columns thereon.

In modern business, the Journal and the Ledger are split up into a number of books, each of which, commensurate with requirements, may be amplified considerably over the

fundamental forms, so that speed is secured in booking the volume of varied business transactions and exchanges handled each day. Hence, in a modern system, this fundamental Journal has been divided into a number of Journals, whereas the Ledger has been developed into different forms —bound, loose-leaf, and cards. Although the Ledger is the record to which reference must be made in determining the status of an account, it is the Journal to which one must refer to secure an entry photograph of each business transaction.

COLUMNAR JOURNAL

In every business certain types of transactions occur again and again. Probably the largest group relates to the in and out movement of cash—cash receipts and cash disbursements. Debiting the Cash account 200 or more times a day, or crediting this account a similar number of times within a period of 8 hours or so, may not cause a particular bookkeeper any concern if his work each day is entirely caught up by closing time. But where such is not the case, some means must be evolved under which the day's work will be completed when the day ends.

With this purpose in view, all postings may be made daily as before from the Journal, except those affecting the Cash account. The amounts of the Cash entries are placed in separate columns, one for the debits and one for the credits; then, whenever it is desired—daily, weekly, or even monthly—the bookkeeper posts the total debits to Cash for such period in a lump sum, after which he does the same with the total credits to Cash for this period—the two entries causing a result similar to that found where three or four hundred or more are required under the use of the previous form of Journal.

Under this latter plan, the Journal contains four columns, the cash items appearing in these extra columns rather than in the regular two reserved for all other debits and credits. These extra columns are essential in this plan of temporarily

suspending or withholding like entries from the Ledger, so that one or more of them will not be overlooked at the end of each period when the debit total and credit total involved are determined for posting to the Cash account.

The use of the special column may be extended to items other than those related to cash. Whenever entries repeat themselves a sufficient number of times each day so as to make it desirable to reduce the posting work connected therewith, one or more special columns may be introduced upon the Journal for each such group. Hence, considering only the columnar expansion of the simple two-column Journal, it may be said that no Journal is modern which has not provided a number of special columns sufficient to take care of all the groups of recurring entries, reserving the two general columns merely for recording the debits and credits which are presumed to be of infrequent occurrence.

Such a columnar Journal form (theoretically at least) is excellent up to a certain point, but beyond this its usefulness is no more pronounced than that of the simple two-column sheet. As a business expands and grows, there must be a sympathetic expansion and growth in its accounts. An increase in the number of accounts assumes an increase in the number of entries to these accounts. This, in turn, requires that the columnar Journal be expanded also, more and more special columns being added. Eventually, the record becomes unwieldy and cumbersome to handle. The more columns, the easier it is for the bookkeeper to enter his figures in a wrong manner. Also, an increase in the number of columns always means an increase in wasted space on each sheet, since, for each entry, a whole line is required horizontally across the page.

Then, again, one bookkeeper is capable of doing only a certain amount of work each day. If he reaches his capacity, the addition of columns to his Journal does not solve the problem of having the work kept up to date. If a second bookkeeper is hired to assist the first one, the problem still is unsolved, inasmuch as two persons cannot work satisfac-

torily upon a record at one time; the business will not be much better off than it was prior to the hiring of the new employee. In other words, the columnar Journal idea, in its simple form, has reached the end of its usefulness and must be replaced by something else. Of course, each bookkeeper may be given one of these columnar Journals to keep, but although this expedient permits the work to be divided between each of them, each such Journal still is subject to the same disadvantages mentioned above. Other means must be evolved to solve the difficulty, preferably keeping, however, the good features of the columnar idea.

USE OF SEPARATE JOURNALS

The objections and disadvantages mentioned concerning the extended columnization of the simple Journal are met and solved by eliminating from the simple column form each special group of recurrent transactions and related amount column or columns, placing each such class in a separate binder or cover; by doing this, a separate Journal is provided for each such similar group of facts. For example, if this is done for the two columns holding debits and credits to Cash, and if other columns are added to the new form to hold certain useful information concerning cash, as dates, and so forth, a simple form of Cash Book results. This principle is of universal application to the transactions involving cash, purchases, sales; and it may be applied to any other group of similar transactions where the items recur sufficiently often to make the application desirable.

If the above ideas are understood clearly, it is seen that every book of original entry in a system of accounts performs a Journal function, regardless of what may be the specific title applied to a particular record of this type. In other words, the Cash Book, the Purchase Book, the Sales Register, and so forth, are Journals. When it is desired to add one of these special Journals to a system, it should be decided first that such an addition actually will be a con-

venience and will promote a saving of some kind in excess of the added cost necessary to operate the new record.

CASH BOOK

The principal special Journal is the Cash Book, this being in reality two separate Journals—one for receipts and one for payments. In a small concern, it is probably more common to find these two within the covers of one book, the usual Cash Book, whereas in a large or moderate-sized business, these two Journals usually are separate—the Cash Receipts Register and the Check Register.

PURCHASE BOOK

The form of the Purchase Book or Journal in modern practice depends upon existing conditions—it may be a simple one resembling that of a two-column Journal, or it may be ruled in an elaborate columnar manner. In its simple form, the individual amounts are credited to the detail creditors' accounts; the monthly totals are debited to Purchase account, and are credited to the Creditors Ledger control, if a subsidiary Ledger is used. Frequently, postings to individual creditors' accounts are made from the bills, the Purchase Journal acting as a Recapitulation Sheet from which postings are made only to the General Ledger.

SALES BOOK

This separate Journal furnishes a daily record of sales. Its ruling may be simple or fairly elaborate, as is the case with the Purchase Record or Register. The simple record resembles the two-column Journal, individual amounts being debited to the detail customers' accounts; the monthly totals are credited to Sales account, and are debited to the Customers' Ledger control, if a subsidiary Ledger is used. If postings are made to customers' accounts from copies of

Sales Tickets, the Sales Journal acts as a Recapitulation Sheet from which postings are made only to the General Ledger.

GENERAL JOURNAL

In a modern system of bookkeeping, one may encounter many special Journals; yet, regardless of their number, numerous transactions occur intermittently, each group of which is not of sufficient recurrence to require therefor a separate record. For all of these, but one Journal is utilized, the so-called General Journal. Theoretically, this book may be assumed as being the original simple Journal stripped of all transactions except those of a miscellaneous nature—as those relating to opening, adjusting, and closing the books; transfers between accounts; and correcting of errors.

COLUMNIZATION OF SEPARATE JOURNALS

The actual mechanism of recording transactions is facilitated greatly by separating the simple Journal into a number of special ones, as desired, each such separated portion being merely part of the original form kept in its own covers. Further, the student's work with the processes of bookkeeping undoubtedly have made him familiar with the principle of the controlling account, particularly as related to the accounts with customers and creditors. Therefore, it is proposed in the remaining portion of this chapter to review, briefly, the relation of the principle of columnization to that of the controlling account.

The idea of separation is applied to the Ledger as well as to the Journal. Cash, purchase, and sales transactions are segregated on the one hand; and the accounts with persons involved especially with sales and purchase transactions are taken out of the one Ledger, where they rested with the other accounts used, each class being transferred to a separate Ledger—Customers' Ledger for customers' accounts and Creditors' Ledger for creditors' accounts. The remain-

ing accounts are retained upon the original Ledger—the General Ledger—and instead of the detail accounts therein for customers and creditors, two controlling accounts are added—one over the Customers' Ledger and the other over the Creditors' Ledger.

Where controlling accounts are used, it is essential that the Journals be columned sufficiently so that the periodical entry-making is facilitated for the controls related to the groups of accounts carried on subsidiary Ledgers which are affected currently by a fair volume of transactions. For example, take the case of customers' accounts. Numerous charges occur monthly for sales made, and numerous credits must be booked for cash and notes received, and for adjustments due to returns and allowances. If a separate column (or columns) is not placed upon each of the various Journals in which customers' transactions are entered so that a column total appears automatically, by addition only, in each place for monthly posting to the control, the detail figures for this purpose must be summarized separately from each record, so that such posting may be made. Naturally, where the customers' transactions are at all numerous, the separate preparation of each summary consumes a large amount of time unwarrantedly, since the use of a separate column for customers on each Journal provides for a summarization as each entry is made, not thereafter.

The above suggests that a separate column is not required for the accumulation of control figures for every control carried; this is true, but where space permits, such a column usually is desirable. In some systems, dozens of controls are found with only occasional transactions affecting them; here, a separate Journal column in which to accumulate the figures for each controlling account would make some of the Journals column-heavy, and really cause a considerable waste of time in attempting to operate them than they would a saving. Take the property accounts, for example. In most systems, additions thereto probably will be found in the "Sundries" column of the Voucher Record, even

though a subsidiary Property Ledger may be maintained. Postings to the General Ledger will be made individually or from a summary of the Sundries column prepared at the end of each month.

Further, other columns are essential for the application of the principle mentioned previously—the making of one posting for a group of like entries, rather than one posting for each item in each group—to various accounts other than controls. In the present discussion, the following columnar Journals are used:

1. Purchase Register
2. Sales Register
3. Cash Book
4. Petty Cash Book
5. General Journal

COLUMNAR PURCHASE REGISTER

In this record, one column is used for each class of commodity purchased. Inasmuch as purchases may be assumed as covering all purchases—not only goods, but supplies, wages, salaries, and so forth, as well—this form may be columned variously to provide the necessary inclusion. From left to right across the page, the headings for a simple record of this kind are:

Date
Explanation
Invoice No.
Folio
Total
Credit—Accounts Payable
Debit
  Account Purchases
    A Goods
    B Goods
  Cash Purchases
    A Goods
    B Goods
  Freight—In

Sundries
Account
Folio
Amount

The posting of a record similar to the above is illustrated as under:

Purchases—A Goods (total of column Account and Cash)	$c	
Purchases—B Goods (total of columns Account and Cash)	$c	
Freight—In (total of column	$c	
Sundry Accounts (each entry posted currently in order)	$c	
To—Accounts Payable		$c
(Post each account separately to Creditors' Ledger, and total of column to the control of Accounts Payable on General Ledger.)		

The above entry is spread on the Ledger monthly, except for the sundry items, which are posted individually as entered.

This summary entry may be placed on the General Journal from whence the posting is made; it may be placed at the end of the last page each month in the Purchase Register, and posted therefrom; each column total and the detail may be posted directly from the form without preparation of the summary entry. The first method has nothing of merit, since it contemplates a transfer from one Journal to another prior to posting. The second method will enable the bookkeeper to balance his entry just as well as the first one, prior to posting, and it has the added advantage of being placed where it belongs. The experienced bookkeeper probably will follow the third one. For general use, the writer favors the second, although the last is used by him at all times in his own work.

The daily total of the cash purchases is found also on the Cash Book, payments side, being entered in the Accounts Payable column. A check-mark is placed in the Folio col-

umn so that no debit posting will result from the Cash Book, except as against the Accounts Payable control. Under this method, cash purchases pass through the Accounts Payable control as a credit from the Purchase Register and as a debit thereto from the Cash Book; the effect of this treatment is seen in the following illustrative entries:

PURCHASE REGISTER

Purchases	500.00	
To—Accounts Payable (control)		500.00

CASH PAYMENTS SIDE OF CASH BOOK

Accounts Payable (control)	500.00	
To—Cash		500.00

The above method of treatment may be replaced by others, as desired.

COLUMNAR SALES REGISTER

On this form, merchandise sales are segregated into various groups by setting aside a separate column for each. Inasmuch as sales of articles other than goods held for sales purposes are infrequent, the usual Sales Register does not provide for recording these unusual sales. The headings for this columnar record, from left to right across the page, in simple form, are:

Date
Bill No.
Explanation
Folio
Total
Debit—Accounts Receivable
Credit
  Account Sales
    A Goods
    B Goods
  Cash Sales
    A Goods
    B Goods

The posting of a record similar to the above is shown as under:

Accounts Receivable ..... $c
(Post each account separately to Customers' Ledger, and column total to the controlling account of Accounts Receivable on General Ledger)
To—Sales—A Goods ..... $c
Cash Sales—A Goods ..... $c
Sales—B Goods ..... $c
Cash Sales—B Goods ..... $c

The daily total of the cash sales is found in the Cash Book, receipts side, being entered in the Accounts Receivable column, after which a check-mark is placed in the Folio column. In this manner, the total sales pass through the controlling account of Accounts Receivable as a debit, to be set off at once by a credit equal in amount to the Cash Sales account (on Cash Book). Naturally, this method of handling may be replaced by others, as desired.

COLUMNAR CASH BOOK

The ruling for this record is indicated below, in each case the columns to run from left to right across the page:

CASH RECEIPTS PAGE

Date
Explanation
Total
Credits
  Accounts Receivable
  Folio
  General Ledger
Debits
  Sales Discount
  Net Receipts
Deposits

The following summary entry covers the receipts page:

Sales Discount ..... $c
Cash (or Bank) ..... $c
To—Accounts Receivable ..... $c
(Post each account separately to Customers' Ledger, and column total to

control on General Ledger. Cash from cash sales is not posted)
General Ledger ..... $c
(Post each account separately to General Ledger)

CASH PAYMENTS PAGE

Date
Explanation
Total
Debits
Accounts Payable
Folio
General Ledger
Credits
Purchase Discounts
Net Payments
Checks
No.
Amount

The following summary entry covers the payments page:

Accounts Payable ..... $c
(Post each account separately to Creditors' Ledger and column total to control on General Ledger)
General Ledger ..... $c
(Post each account separately to General Ledger)
To—Purchase Discount ..... $c
Cash (or Bank) ..... $c

COLUMNAR PETTY CASH BOOK

In the handling of petty cash, the utilization of a Petty Cash Book in columnar form facilitates making the expense distributions. The record consists of two portions, one showing receipt of fund and dates, and amounts of replenishments, and the other displaying the disbursements in classified form. The headings for such a record are illustrated below:

Receipts
Date

Amount
Explanation
Disbursements
Voucher No.
Total
Distribution
Carfare
Postage
Towel Service
Telephone
Repairs
Freight—In
Sundries
Account
Folio
Amount

This record may be posted directly to the General Ledger; its totals may be summarized and spread on the disbursements side of the Cash Book, after which postings are made therefrom; the spread of the summary may be made upon the Purchase Register, after which postings are booked. In this last event, the disbursements total passes through the Accounts Payable control as a credit from the Purchase Register, and as a debit thereto from the Cash Book; this treatment is favored by the writer whenever all purchases are passed through the Purchase Register or Voucher Record. If the record is auxiliary to the Cash Book, the following summary entry is illustrative:

Carfare	$c	
Postage	$c	
Towel Service (column totals posted)	$c	
Telephone	$c	
Repairs	$c	
Freight—In	$c	
Sundries (each account posted separately)	$c	
To—Cash (or Bank)		$c

COLUMNAR GENERAL JOURNAL

The columnar ruling of this record must provide for total postings to be made to the controlling accounts carried, as

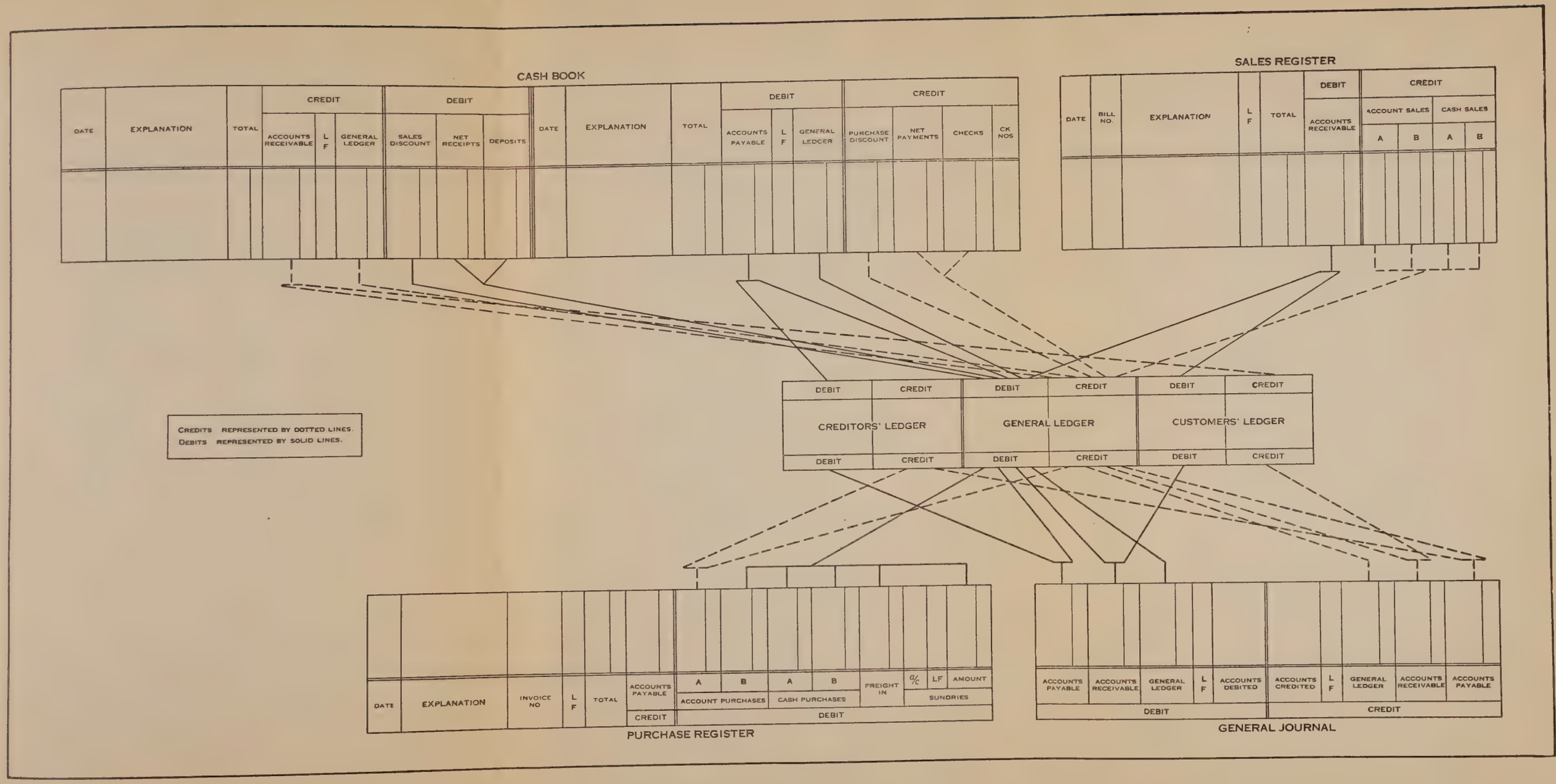
well as for the usual other entries falling to the province of this form. Inasmuch as only the use of two controlling accounts has been assumed in the present connection—Accounts Receivable and Accounts Payable—a debit and a credit column must be provided for each of these. Also there must be a debit and a credit column for the General Ledger accounts other than the controls—six amount columns in all. The following headings are illustrative:

Accounts Payable
Accounts Receivable
General Ledger
Folio
Accounts to Be Debited
Accounts to Be Credited
Folio
General Ledger
Accounts Receivable
Accounts Payable

The various summary entries for the columnar books of original entry commented upon above, make it possible to secure a Trial Balance from the General Ledger without reference to the subsidiary Ledgers. Columnization and the controlling account facilitate the bookkeeper's work by permitting him to eliminate constant repetition in journalizing, and by enabling him to secure for portions of the work a check upon its accuracy—the balance in each controlling account must be equal to the sum of all the balances of the related detail accounts carried in the connected subsidiary Ledger. Regardless of how many controls may be contemplated, the principles commented upon above fundamentally apply.

RELATIONSHIP OF COLUMNIZATION TO CONTROL PRINCIPLES

In order to crystallize in the student's mind the relationship that exists between the principle of columnization and that of the controlling account, and the better to comprehend the work of subsequent chapters, the simple columnar


CASH BOOK
DATE
EXPLANATION
TOTAL
CREDIT
ACCOUNTS RECEIVABLE
L F
GENERAL LEDGER
DEBIT
SALES DISCOUNT
NET RECEIPTS
DEPOSITS
DATE
EXPLANATION
TOTAL
DEBIT
ACCOUNTS PAYABLE
L F
GENERAL LEDGER
CREDIT
PURCHASE DISCOUNT
NET PAYMENTS
CHECKS
CK NOS
SALES REGISTER
DATE
BILL NO.
EXPLANATION
L F
TOTAL
DEBIT
ACCOUNTS RECEIVABLE
CREDIT
ACCOUNT SALES
CASH SALES
A
B
A
B
CREDITS REPRESENTED BY DOTTED LINES.
DEBITS REPRESENTED BY SOLID LINES.
DEBIT
CREDIT
CREDITORS' LEDGER
DEBIT
CREDIT
DEBIT
CREDIT
GENERAL LEDGER
DEBIT
CREDIT
DEBIT
CREDIT
CUSTOMERS' LEDGER
DEBIT
CREDIT
DATE
EXPLANATION
INVOICE NO
L F
TOTAL
ACCOUNTS PAYABLE
CREDIT
A
B
A
B
ACCOUNT PURCHASES
CASH PURCHASES
FREIGHT IN
%
LF
AMOUNT
SUNDRIES
DEBIT
PURCHASE REGISTER
ACCOUNTS PAYABLE
ACCOUNTS RECEIVABLE
GENERAL LEDGER
L F
ACCOUNTS DEBITED
DEBIT
ACCOUNTS CREDITED
L F
GENERAL LEDGER
ACCOUNTS RECEIVABLE
ACCOUNTS PAYABLE
CREDIT
GENERAL JOURNAL

Journals illustrated above have been assembled roughly in chart form. The debit flow of entries from these Journals to the Ledgers is indicated by the solid connecting lines, whereas the credit movement of entries from the Journals is shown by the dotted lines.

The headings for the Purchase Register and for the General Journal are the same as those shown previously, except for the fact that they have been placed at the bottom of the forms, the better to reflect the flow from these books to the Ledgers (by keeping the forms right side up and the flow lines short). See Form 1.

The principles reviewed in this chapter are applicable to an infinite variety of situations. Controlling accounts, for example, may be established in connection with a large number of account groupings—both those related to the Balance Sheet and those related to the Statement of Profit and Loss. Each such controlling account established will control a subsidiary Ledger, or what in effect is a subsidiary Ledger; for example, the General Ledger may contain but one account with Selling Expense, the detail of which is found upon a columnar Distribution Sheet placed, say, at the back of the Voucher Register binder. To all intents and purposes, this Distribution Sheet is in effect a subsidiary Ledger. Further, the use of certain of the controls will require the application of the principle of columnization to certain of the Journals, so that totals may be accumulated thereon for posting to the control involved.

Test Questions

Prepare answers in writing for the following questions:

1. Define: Journal; Ledger. Which of the above is a book of original entry?
2. Why is it not feasible to have no other books in an accounting system than Ledgers?
3. To what use should a General Journal be put?
4. What are the limitations on the use of special Journals and special columns?

5. If you were employed by a firm, or by a corporation that has been in business a number of years, to install a system of accounting, what would be your procedure? After your answer to this question has been prepared, store the points away in the back of your memory to compare mentally with the answer you would prepare after completing the study of this book.

6. In designing a set of accounts for a business, how might provision be made for a constant showing of the aggregate sum owing by customers and the aggregate sum owing to creditors, without the necessity of preparing a schedule of the accounts of such customers and creditors?

7. Give the names of several controlling accounts.

8. What criticism do you offer of the practice of passing monthly summary Journal entries through the General Journal?

9. What books of account do you consider necessary for the conduct of a small business of a trading nature?

10. Define: General Ledger; subsidiary Ledger; private Ledger.

Problems

(*a*) Submit rulings for the following correlated records:

Purchase Book
Cash Book
Petty Cash Book
Sales Book

In connection with the above, assume the following: Purchases and sales are to be classified into four divisions:

Furnishings
Men's Clothing
Boys' Clothing
Miscellaneous

Cash sales are to be recorded in both Sales and Cash Books.

Controlling accounts are to be established for customers and for creditors.

All receipts are deposited in bank intact, and payments are made by check whenever possible.

Submit, for the above books, a schedule of *pro forma* monthly entries to be used as a guide by the bookkeeper.

(*b*) Rule a columnar Cash Journal to be used by a local taxicab company operating six cars, four of which are stationed regularly in front of a local hotel. The usual expenditures are those generally applicable to such an activity. By summary entry show the monthly closing of this form.

The form contemplated is a columnar sheet embodying all the records of original entry.

Indicate the limitations of use for such a form. In what types of business could it be used advantageously, if at all? Explain fully.

(*c*) A certain corporation has 15 Sales Ledgers. It desires to adopt a system of sectional balancing so that each Ledger can be balanced separately each month. Outline such a system.

III

STORES AND PURCHASING

Department organization. Stock requirements. Stock control and adjustment. Purchasing activities or functions. Purchase Requisition or Request; Shortage Report. Quotation Lists. Purchase Order; Purchase Order Register. Receiving goods: Voucher Register. Routing Chart: purchase procedure. Instructions on revamping an existing system. Factory departmentalization. Instructions for routing Material Invoices and Receiving Slips. Instructions for issuing and routing Material Requisitions. Classification of stores.

The activities of a business in a most summarized form are three in number, their sequence being:

1. Purchasing
2. Holding for sale, or for manufacture and sale
3. Selling

Inasmuch as the sales records, especially where credit is given, often require more time to keep than the records for the rest of the business put together, most persons are apt to consider that the importance of the selling division far exceeds that of any other; this is an error. Since accounting should make for an increase in profits—otherwise it is useless—better profits cannot be secured unless the recording and regulating of purchases be given some serious thought. Hence, in developing the principles of the next portion of the work—those related to procedures, records, and forms—it is proposed, first, to consider in some detail the purchasing activity, rather than that of sales.

Only if the stock in a business undertaking is well balanced and active is a firm basis secured for maintaining a satisfactory rate of turnover. This is the foundation of profit. In order to secure a proper rate of turnover, accurate accounting is a necessity; and whatever may be its development, the system must provide a check upon all purchases,

and keep these properly coordinated with the sales policy and with sales. In the later chapters on retail merchandising, considerable comment is offered on turnover, inasmuch as this subject seems better attached thereto than to the present one.

If the accounting scheme for purchases is efficient, it will bring out clearly the reasons for buying, the kind of purchasing that should be attempted, and how much was bought in relation thereto. Poor purchasing frequently is the reason for sales losses:

1. The price may not be right;
2. The quality of the goods may not be desirable;
3. The quantities may not be right;
4. The goods purchased may not be those needed.

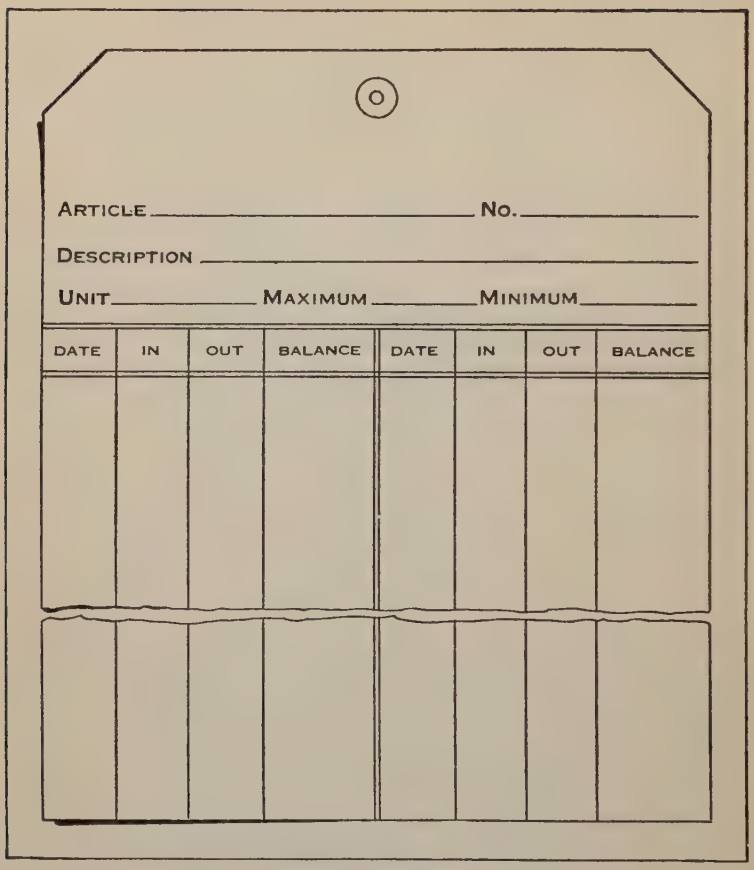
An exceedingly close relationship exists between purchases and the various parts of a business.

DEPARTMENT ORGANIZATION

Purchasing principles are applicable with equal force to a small business or to a large company. The purchasing department may be small or large; that is immaterial, since the theoretical division of the work functionally is the same, at least for practical purposes. If one person has entire charge of the activities related to purchasing, all functions center in him; and if the work is divided among a dozen or more individuals, each has one or more functions for the success of which he is responsible. Physical departmental divisions are unnecessary. If the accountant confines himself to a consideration of functions, the application of principles to the small or large enterprise should not be difficult to comprehend. Whenever possible, even in a small concern, the purchasing work should be in charge of one or more specialists.

The efficiency of a purchasing system may be tested fundamentally by applying the following thereto:

1. Whatever it is that is purchased should be secured only when it is needed. The error is just as glaring proportionately



Form 2: Bin Tag.

if purchases are in excess of needs as where the purchases are insufficient to keep an organization working smoothly.

2. The prices at which purchases are made are related intimately to quality, and the quality should be proper for the purposes at hand.
3. Although clerical errors and fraud cannot be eliminated completely, a proper system of internal check should keep them at a minimum (for internal check, see post, Chapter VII).
4. Since an intimate relationship exists between purchases and

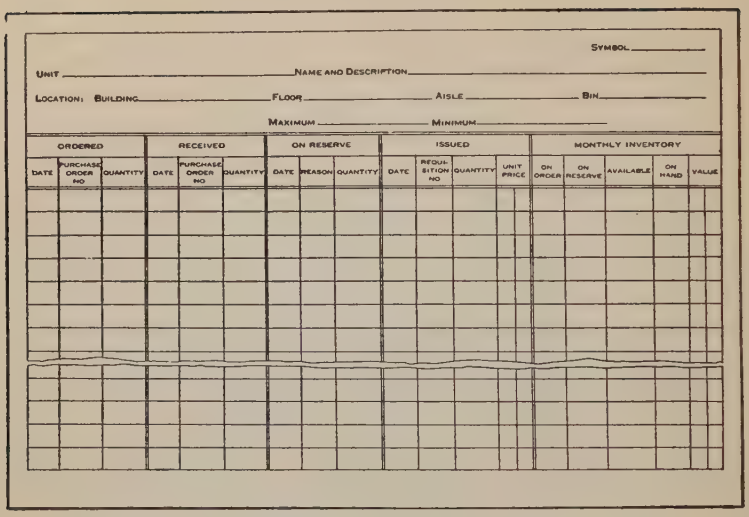
requirements, the functions of purchasing and stockkeeping must be complete—a condition not as universally evident as is the opposite one.

STOCK REQUIREMENTS

If stock quantities on hand are seriously in excess of what may be considered as the legitimate upper limits required, a certain amount of capital—equal to the amount of such excess—is unusable. This can have no effect other than reducing the turnover, but a reduced turnover means a lower profit rate than otherwise is possible. In order to avoid the pitfall suggested, it is essential that for each item of stock carried intelligent maximum and minimum limits be set. Too much thought cannot be given to the problem of setting these limits. Briefly, the solution is grounded in the plans for the current year in relation to past experience.

But regardless of the amount of thought given to establishing these stock upper and lower limits, the decided-upon results cannot be looked upon as anything better than estimates; nevertheless, estimates carefully prepared will accomplish much in insuring against error. Again, care must be observed not to treat in a similar manner the future possibilities of a business in which sales are fairly uniform, and those related to a seasonal activity, inasmuch as the future needs in the latter type of enterprise are more difficult to anticipate than those in the former kind. Where sales are fairly uniform, the minimum limit may be set as a certain proportion of sales anticipated, being expressed in terms of a certain number of days' supply, as founded upon an analysis of past periods recapitulated in terms of, say, a certain number of months' results.

In a seasonal activity, the difficulty of establishing an adequate minimum basis increases as the seasonal fluctuation increases. The problem may be solved by approaching it from the angle of each article handled—how much of each one has been manufactured and shipped each season over a



SYMBOL

UNIT NAME AND DESCRIPTION

LOCATION: BUILDING FLOOR AISLE BIN

MAXIMUM MINIMUM

ORDERED			RECEIVED			ON RESERVE			ISSUED				MONTHLY INVENTORY				
DATE	PURCHASE ORDER NO	QUANTITY	DATE	PURCHASE ORDER NO	QUANTITY	DATE	REASON	QUANTITY	DATE	REQUISITION NO	QUANTITY	UNIT PRICE	ON ORDER	ON RESERVE	AVAILABLE	ON HAND	VALUE

Form 3: Stores Ledger

period of years. When it is discovered that the demand for a certain article has been fairly uniform, a minimum limit therefor may be set. But where an item is entirely seasonal, the setting of such a limit in the usual manner should not be attempted. About the only thing that can be done is to establish therefor some kind of an estimated program of manufacture and set up the minimum limit with such program in mind. It cannot be expected here that no error will be made, yet the fact that a uniform production plan is established should more than offset in economy any error made in having on hand more stock than is called for by the determined-upon minimum.

STOCK CONTROL AND ADJUSTMENT

Each item carried in stock should be so recorded that its location is known constantly; this is not a matter of memory alone. Only if the stock records are maintained properly, is the expense of their upkeep justified; otherwise, the records are useless and their maintenance unjustified.

The Stock or Stores Ledger sheets or cards are of a size which depends primarily upon personal desires or upon the presence of available filing cabinets of certain dimensions; a form 4 by 7 inches, or 5½ by 3½, is assumed as being fairly standard. At any rate, whatever the size of the form, it should not be too bulky in relation to the information desired for record purposes. The primary factors of informational value would seem to be:

Stock location
Receipts
Issues
Balance
Maximum and minimum limits (by months if seasonal)

If the record is kept by the storekeeper, some believe that values are unnecessary; this is questionable (see Forms 2, 3, 4, 5, and 6).

The accuracy of the storekeeper's figures should be checked from time to time, by the making of physical stock counts. The usual method seems to be to compare the actual stock on hand with the recorded amount whenever a shortage is reported, this procedure resulting in a continual check on errors without having to interrupt the usual activities for the purpose of taking inventory. Again, an actual count is secured when the expenditure of time is of the smallest amount, as when the stock to be counted is at lowest quantities. Also, such practice prevents unnecessary purchasing, apparently necessary because of clerical errors. And, finally, the method actually produces a perpetual inventory.

The stock maximum and minimum requirements should be planned by the executives since they are in touch with the needs of the business; this should not be left to the discretion of the storekeeper. Further, the reporting of a shortage should not be left to the storekeeper, as so often is the case; in a large concern, shortages are uncovered by employees from the comptroller's office.

When the Shortage Report (indicating an amount on hand less than the minimum requirements) is received at the

STOREKEEPER WILL PLEASE DELIVER THE FOLLOWING: NUMBER _____

FOR ORDER NUMBER _____ DATE _____ 19 _____

DESCRIPTION		PRICE	AMOUNT	

APPROVED BY _____

RECEIVED BY _____

Form 4: Stores Requisition.

point of purchase contact, the balance on hand should be checked out at once by physical count. The receipt of this report should be so timed that purchases may be received for replenishment in ample time prior to use so that the work of the concern will not be tied up. An error in this connection even relative to one item may cause unnecessary delay, with its consequent loss of money; rush orders should be kept at a minimum. A further point in this connection is that to fill a rush order, purchases may have to be placed at topmost prices (see Form 9).

PURCHASING ACTIVITIES OR FUNCTIONS

The activities centered around the broad function of purchasing may be summarized as under:

1. Securing, selecting, classifying, and filing information assumed as useful in connection with placing orders with vendor concerns. This comprehends more specifically the maintenance of proper records and files of catalogs, quotations, sources of supply, and past purchases made;

2. Deciding upon the prices at which purchases shall be made;
3. Systematically handling the requests received from departments to purchase certain articles;
4. Preparing, issuing, and following up the orders which are placed with vendor enterprises;
5. Receiving, inspecting, storing, and issuing whatever it is that has been purchased, including the checking of deliveries to safeguard against the passing of errors and mistakes as correct;
6. Checking, verifying, and recording invoices in cooperation with the accounting department.

The activities roughly differentiated above underlie the general routine to be followed in purchasing, as:

1. A properly authorized Purchase Requisition is issued in duplicate or in triplicate for a definite quantity of whatever it is that may be desired.
2. One or two copies of this requisition flow through regular channels to the Stores Department. Should the need for a particular article be discovered by the storekeeper, the Purchase Requisition originates at this latter point.
3. Checking and approval of this request by the stores department, this being based upon the stores available that may be utilized for the purpose in mind for which the request was issued. If approved, entry may be made in the Stores Ledger upon the proper sheet or card in the space provided thereon for such purpose, or in what may be termed a Material Ordered Register. Should approval be denied, the Requisition to Purchase is returned, with reasons, from whence it came.
4. After approval by the stores department, the request passes to the purchasing department for purposes of checking, approval, and issuance of Purchase Order. The information of various kinds on file at this point, as suggested above, is used in this connection.
5. Bids are secured, acceptance made, and Purchase Order placed. Oftentimes, the order is placed without bids being requested prior thereto. A Purchase Order is issued in two, three, four, or more copies as the system requires. Entry of each issuance is made somehow, as in a Purchase Orders Placed Record and in the Record of Past Purchases (see Form 7).

DATE _____ 19___ No. _____

THE FOLLOWING HAS BEEN RETURNED TO STORES:

FROM ORDER NUMBER _____ STOREKEEPER _____

DESCRIPTION		PRICE	AMOUNT	

Form 5: Stores Returned Memorandum.

6. In order to secure prompt shipment, a scheme of follow-up is utilized, probably by means of a card tickler file showing dates when each follow-up should be issued.
7. Upon receipt of goods, they must be counted, weighed or measured, be inspected, examined, and tested.
8. The Purchase Invoice, upon receipt, passes to the purchasing department, the first work hereon being to record it in some record so that its receipt cannot pass unnoticed.
9. The Invoice is checked and verified, also, in the purchasing department in connection with documents on file there already which relate thereto—as Purchase Request, Bids, and Purchase Order (see Form 13).
10. The Invoice is checked, extended, vouched, and entered in the books of account, in the accounting department. The Voucher, with invoice and other papers attached, is approved for payment, and paid.

PURCHASE REQUISITION OR REQUEST; SHORTAGE REPORT

The document whose purpose it is to request that a purchase be made should originate outside of the purchasing department. Only after this department has received such

a command from outside of its confines should it be possible to start the purchasing activities into motion.

The request may come from any one of a number of possible sources, usually a department head or a general officer. If it relates to certain fixed assets, some general officer should be responsible for its issuance, in which event it passes from him directly to the purchasing department. If it relates to materials, the request may originate in the stores department, or in some other one, although it seems preferable to have the system procedure such that it should be cleared first through the stores department so as to make certain the purchase is necessary.

It may be that the purchase procedure is so laid down that all of these requests originate in the stores department in the form of what may be considered a Shortage Report. Any department desiring materials requisitions the stores department for them, whether or not they are usually carried in stock. If the requisition cannot be filled, the stores department issues a Shortage Report; this report also comes into being whenever it is discovered, in the usual course of checking goods on hand, that the minimum unit of a certain article has been reached. Only by having clearances of Purchase Requests through the stores department is it possible to control stock. No one is in a better position than the storekeeper to know if a Delivery Requisition can or cannot be filled from stock on hand.

Briefly, these Requests, or the Shortage Reports, cover three general types of cases:

1. When the minimum limit in the amount on hand of a certain article has been reached;
2. When special material is required. The request herefor may be placed on a form colored differently from the usual one so as to avoid unnecessary delay;
3. When rush material is required. This form should be colored differently from the other two.

The number of copies prepared should not be less than two—one to be retained at point of issuance and the second

MONTHLY STORES SUMMARY

MONTH OF _____ 19____

ISSUES								RETURNS			
DATE	REQUISITION NO.	ORDER NO.	AMOUNT	DATE	REQUISITION NO	ORDER NO.	AMOUNT	DATE	STORES RETURN NO	ORDER NO.	AMOUNT

Form 6: Monthly Stores Summary.

to be passed through regular channels. After the purchasing department has approved the request, notice of such act should be sent back to the point at which this request originated; this may be in the form of one copy of the Purchase Order (see Form 9).

QUOTATION LISTS

When the person in charge of purchasing has received a Shortage Report, he must decide from whom and at what price the required articles shall be bought. The quantity needed is based primarily upon maximum and minimum re-

quirements plus market conditions; on a rising market, more will be bought than upon a falling market. The basic record here is the Quotation Card. Here are shown, for a particular article, the maximum and minimum limits, the usual order, quotation details, and remarks relative to quantity, price, and delivery. On the reverse side, there are recorded the purchases made, with price and quantity.

A separate form may be desirable for future delivery purchases, as where monthly shipments inward are in order. There is one column for each month, twelve for the year. Upon the acceptance of a bid, notations are inserted in the proper columns of amounts and delivery dates.

In connection with the quotation information, it may be highly desirable to know just what has been the actual performance in respect of articles bought. Such a record usually is found in connection with equipment—items other than ordinary supplies—as belting, and so forth; some concerns maintain one for supplies as well. This information acts as a check upon the quotation record.

PURCHASE ORDER; PURCHASE ORDER REGISTER

After a decision has been reached as to where a certain batch of goods shall be purchased, the next step contemplates the issuance of a Purchase Order by the purchasing agent which, preferably, is prepared in triplicate. The original copy is sent to the vendor; on this is a perforated slip to be returned by the vendor to the vendee indicating dates of delivery. When the slip is returned to the vendee, the latter fastens it to the triplicate copy of the Purchase Order which remains on file. This third copy is printed on bristol board so that it stands on edge easily. Across its top are letters representing months, and numbers for the days of the month. The information shown by the slip returned from the vendor, as to delivery, is transferred to this third copy by means of clip tabs.

The purchase office should follow up the receipt of the

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 J F M A M J J A S O N D

No._____ "TO PLACE ON EVERY INVOICE AND PACKAGE

DATE_____ 19____

PLEASE SHIP THE FOLLOWING TO _____

AND CHARGE OUR ACCOUNT

QUANTITY	DESCRIPTION	DISCOUNT	NET PRICE	SHIPPING DATE
	Original—*White* Duplicate—*Yellow* Triplicate—*Pink* Quadruplicate—Blue Copy for receiving clerk has "quantity" column cut off			

ROUTE VIA _____ TERMS _____

CONFIRMING { VERBAL / TELEGRAM / TELEPHONE }

JONES COMPANY

BY _____
PURCHASING AGENT

NOTICE

All goods held subject to your order until we receive an invoice No allowance made for boxing and cartage

Form 7: Purchase order.

order, the datings above mentioned being used therefore. The duplicate copy of the Purchase Order goes to the receiving clerk, in form this being identical with the original, except that quantities ordered are not shown. It is contemplated that the receiving clerk will check receipts by an independent count.

Every purchase should be covered by a formal written order, even if the order originally was placed by telephone, telegraph, or verbally. As soon as an order is given, it should be followed up closely so that the possibility of having important work held up will be negligible; otherwise, instead of a profit, a loss may result.

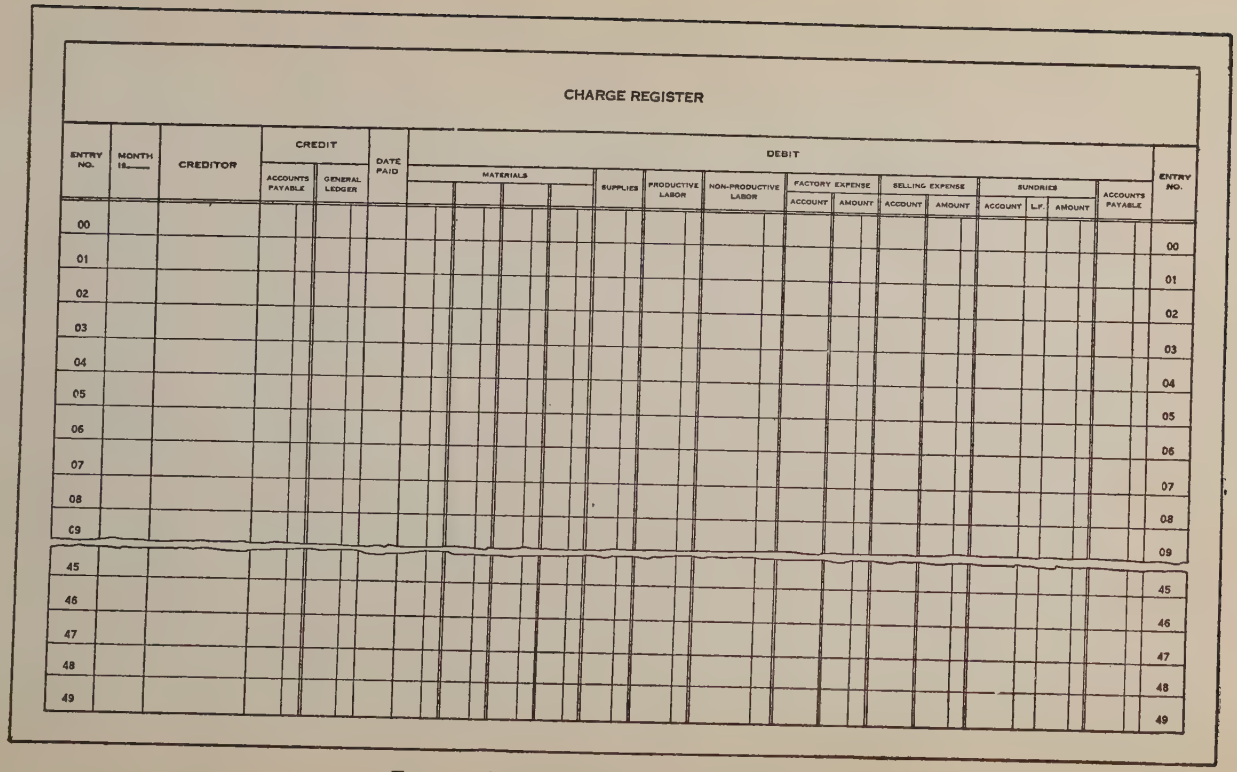
Although preference has been shown for a Purchase Order form prepared along the lines mentioned above, it is to be realized that a wide variation may be encountered in content, size, style, and quality of paper. All should be serially numbered, and this number should be placed on all invoices and bills sent by the vendor house. Again, in a small concern, it may not be necessary to prepare three copies, two being sufficient—original to vendor and duplicate to be filed; in some cases, four or more copies may be desirable.

In practically every case, a considerable saving will result if supplies purchased are given a little thought. Supplies should be withdrawn only upon duly authorized requisitions. Monthly summaries should be prepared by items and by departments. The more important articles should be tested constantly to determine quality. The quantity of supplies on hand should be kept at a minimum.

For quick reference, the orders placed, those received, and those outstanding may be reflected upon the pages of a Purchase Order Register. Such a record is columned to show for each Purchase Order issued—date, number of order, vendor, amount, purpose, when goods expected, when goods received, and so forth. As soon as an order is placed, the columns are filled out except the one or ones related to displaying the date when goods have been received (see Form 7).

RECEIVING GOODS: THE VOUCHER REGISTER

Upon the receipt of goods, the receiving clerk enters upon his duplicate copy of the order the actual amounts that pass through his hands. The sheet is then forwarded to the pur-



CHARGE REGISTER

ENTRY NO.	MONTH 19__	CREDITOR	CREDIT		DATE PAID	DEBIT														ENTRY NO.
			ACCOUNTS PAYABLE	GENERAL LEDGER		MATERIALS	SUPPLIES	PRODUCTIVE LABOR	NON-PRODUCTIVE LABOR	FACTORY EXPENSE		SELLING EXPENSE		SUNDRIES			ACCOUNTS PAYABLE			
										ACCOUNT	AMOUNT	ACCOUNT	AMOUNT	ACCOUNT	L.F.	AMOUNT				
00																				00
01																				01
02																				02
03																				03
04																				04
05																				05
06																				06
07																				07
08																				08
09																				09
45																				45
46																				46
47																				47
48																				48
49																				49

Form 8: Charge Register (Voucher Register).

chasing department for comparison of items against actual amounts ordered, all differences being noted. This duplicate next is attached to the invoice and then both documents are passed to the accounting department. It is at this point that the purchasing records and papers come into contact with the accounting.

Each invoice is entered upon a register of some sort in every concern—probably upon a Voucher Register. The exact form of this record depends upon the nature and extent of the particular business, yet, fundamentally, the underlying principle is similar in all cases. As bills are entered and posted in the "accounts payable" column, the liability of the company is shown in detail. Monthly, the total of these items is posted to a control in the General Ledger. As bills are paid, instead of posting to individual accounts (as under the older system) just the date is stamped or written in a "date paid" column alongside the respective invoice entries in the register. A double posting, therefore, is unnecessary.

The rulings of such a register are separable into a number of classes, each related to some business element; the following are illustrative:

1. Stores (materials and supplies)
2. Factory Cost (work in process)
3. Pay-Roll
4. Selling Expense
5. Administrative Expense

Each of these groupings may be subdivided more or less in detail corresponding basically to the accounts under each division, the number of subdivisions being limited only by the size of the page horizontally. About 51 lines vertically and 50 columns from left to right are the outside limits, and it is in relation to this element that considerable improvement may be made in many of the forms of this record found in use.

These registers have developed along two specific lines—one type of ruling being particularly adaptable to small con-

WEEKLY SHORTAGE REPORT

PHYSICAL COUNT MUST BE MADE BEFORE ENTERING ANYTHING ON THIS REPORT

DATE _____ 19 _____

DESCRIPTION	MAXIMUM TO BE CARRIED	MINIMUM TO BE CARRIED	LAST ORDER NUMBER	NOW ON HAND

REPORTED BY _____

Form 9: Shortage Report.

cerns and the other being related definitely to enterprises which are large or complex. In a small activity, the form may be ruled so as to be decidedly inclusive—columns being provided for each division of expense which has a fairly frequent number of transactions. One "sundries" section is sufficient for the "occasional" entries.

In a business which is large or complex, enough columns cannot be provided upon such a register to hold all detail. Hence, only broad divisions are used, each of which may be looked upon as accumulating information for a related controlling account and the detail accounts controlled thereby.

The total of the "credit" column must agree with the aggregate of the "debit" distribution columns on each sheet. This agreement furnishes one check. The totals alone are

RECEIVING REPORT NUMBER _____

DATE _____ 19____

RECEIVED FROM _____

VIA _____ { FREIGHT / EXPRESS BILL NO. _____

CHECKED BY _____ TIME RECEIVED _____ CHARGES _____

CAR NUMBER _____ INITIALS _____ PLACED _____ RELEASED _____

PURCHASE ORDER NUMBER _____ PURCHASE REQUISITION NUMBER _____

QUANTITY			DESCRIPTION	WEIGHT OR SIZE	REMARKS
CASES	BBLS.				

CHECKED TO INVOICE _____ _____
RECEIVING CLERK

Form 10: Receiving Report.

posted to the General Ledger, rather than a host of detail entries. Unpaid invoices are filed according to the name of the creditor in an "unpaid invoice" file; this file produces much more detailed information than Ledger accounts possibly could. The open spaces in the "amount paid" column should be agreed with the unpaid invoices. Invoices marked "paid" in error are located quickly by comparison between unpaid invoices and the open spaces on the register. Paid invoices

CLAIM VOUCHER

DATE _____ 19 _____ DEBIT NUMBER _____

YOUR ACCOUNT THIS DAY HAS BEEN DEBITED $ _____ AS BELOW

DATE	REASONS			AMOUNT	

Form 11: Claim Voucher (Debit Memorandum).

are filed in a "paid" file by creditors' name (see Forms 8, 10, 11, 12).

ROUTING CHART: PURCHASE PROCEDURE

The illustrative Routing Chart offered in this chapter is representative of those which may be prepared for each step of system procedure, the better to locate the flow therein; frequently, a procedure is seemingly well balanced and replete with so-called internal checks and yet does not function as it should, the defect not being apparent without reference to a blue-print lining up the entire unit of the system scheme. The idea suggested by this chart is applicable to situations other than that related to purchases; hence, it does not appear necessary to present a similar chart in connection with each division of general procedure taken up, although certain of these charts are noticed in one or two later chapters (see Form 14).

INSTRUCTIONS ON REVAMPING AN EXISTING SYSTEM

The principles presented above being more or less detached, it is proposed to illustrate their application, in some degree at least, to a company which fabricates automobile transmissions, and which employs from 1,000 to 1,500 men. Orders are secured primarily upon a contract basis; hence, an elaborate sales organization is unnecessary. In fact, the sales office work is deemed so unimportant that it is done in the factory office, and no elaborate distributions are in order for the purpose of securing apportionments of space, and so forth. Under the old order of events, the various pro- feature of control was almost entirely lacking. The recog- cedures were performed in such a haphazard manner that the nition of this last fact prompted the board of directors to call in outside assistance to straighten out existing meth- ods. A period of approximately 18 months was consumed in revamping the existing system. Although the accountant in charge was not on the case all this time, an assistant was there every working day.

NUMBER _____

_____ DATE _____ 19 ____

PLEASE BOOK THE FOLLOWING ENTRY

DEBIT }
CREDIT } _____ ACCOUNT

ENTERED BY _____

DATE _____

Form 12: Authorization for Adjusting Entries.

QUANTITY O.K. _____

PRICES O.K. _____

EXTENSIONS O.K. _____

TERMS _____

DEDUCTIONS _____

_____

CHARGE _____

APPROVED _____

VOUCHER NUMBER _____

Form 13: Invoice Stamp.

Although it is not proposed to offer herein the entire set of instructions prepared, and it is not to be assumed that what is offered is entirely complete, as certain others would have prepared these instructions, they will illustrate the application of certain principles and will give considerable information as to how a report of this character may be framed.

The present contact is concerned particularly with:

1. Factory departmentalization (the better to understand what follows);
2. Instructions for routing Material Invoices and Receiving Slips;
3. Instructions for issuing and routing Material Requisitions;
4. Classification of stores;
5. Chart showing method of connecting stores with Controlling Material accounts on General Ledger.

FACTORY DEPARTMENTALIZATION

One of the first tasks confronting the accountant was to revamp the factory departmental divisions. After considerable time had been devoted hereto, the result of the study was crystallized as under:

DEPARTMENT	FOREMAN
Raw stock	A
Forge	B
Gear-cutting	C
Milling	D
Jones & Lamson	E
Automatic	F
Lathe	G
Grinding	H
Toolroom	I
Hardening	J
Case	K
Transmission assembly	L
Quad. assembly	M
Millwright	N
Clutch-housing	O
Shipping-room	P

INSTRUCTIONS FOR ROUTING MATERIAL INVOICES AND RECEIVING SLIPS

Copies to:

General manager ..... Mr. Partridge
Mr. Hunt
Accounting department ..... Mr. Joseph
Mr. Hurd
Purchasing department ..... Mr. Benson
Factory superintendent's office ..... Mr. Hurley
Productive record department ..... Mr. Elwin

Comment:

Departmental heads will transmit to their subordinates the necessary instructions to confrom with any changes from present procedure.

All material purchased, regardless of nature, must come in through the receiving room, and must have a Receiving Slip issued for it.

Each invoice received through the mail must have the date received stamped thereon by the mailing department, after which it is turned over to the purchasing department. Any invoice received otherwise than through the mailing department will be dated and then be passed to the purchasing department.

The purchasing department will check each invoice for price, terms, extension, and note carefully that the quantity billed does not exceed that which was ordered. The order number is inserted upon the invoice, after which such record is made in the Commit-

ment Ledger, and so forth, as is necessary. Then the invoice is turned over to the purchase distribution department. No delay should be tolerated; the above should be done promptly.

The purchase distribution department assigns a number to each invoice. Next, each invoice is registered, but only as to the following: date, vendor's name, amount, and register number. Then this department will turn over all Material Invoices promptly to the stores record department. Expense Invoices, on the other hand, are to be forwarded to the accounting department (Mr. Hunt), for classification, *not* to the stores department. After classification, these Expense Invoices will be returned to the purchase distribution department, for entry in the Distribution Record, after which they will be forwarded again to the accounting department, to be treated as any other invoice.

Invoices for machines and tools, after registry by the purchase distribution department, will be forwarded to the manufacturing control department for entry on its records, following which they will be sent to Mr. Hunt for review and passed by him to the purchase distribution department for entry on its records; they are then to be returned to the accounting department, after which they will follow the usual course.

In-freight bills, for bulk commodities (as steel, lumber, coal, and so forth), will be sent from the accounting department to the stores record department (Mr. Holman) for entry on the Stores Cards. These bills do not take the routine of other invoices, since they must be paid before being recorded so as to expedite the freeing of material. Small freight items for sundry material other than bulk purchases are not to be sent to the stores record department, being classified in the accounting department as Miscellaneous Freight under whatever overhead division to which the commodity applies—Case Hardening, number 191; Heat, Light, Power, number 141; Factory Supplies and Expense, number 72; General, number 218. Next, they are chargeable to the Expense Ledger against the designated expense account.

Daily Freight Invoices are prepared in the purchasing department, and are then sent to the accounting department (see instructions under freight bills). The accounting department issues a check in settlement of each such invoice before it is recorded; after check issuance, the invoice must be scrutinized by Mr. Hunt to see that the correct distribution is made, and subsequent to this each such invoice will be forwarded to the stores record department to enable the record being made here for such freight items as are pertinent to their records. Lastly, they are sent to the pur-

Form 14: Routing Chart—Purchase Forms.

chase distribution department for entry, after which they again go to the accounting department.

The stores record department will match up the invoice with the yellow copy of the Receiving Slip, and attach such slip to the invoice. If the Receiving Slip has not come through, the invoice must be held for it. The reported quantity per invoice must be checked with the Receiving Slip (at which time it should be noticed that the price has been o.k.'d by the purchasing department and the extensions checked), after which the invoice is to be classified as per Materials Chart. The invoice is then entered upon the proper Stores Record Card, the order number being noted thereon also. The stores record department then stamps the invoice "Entered on Stores Record." Next, the invoice is sent to the accounting department (to Mr. Hunt), who should scrutinize it and then note by rubber stamp that he has passed it approved. Following this, the invoice is given to the purchase distribution department for record purposes, it being distributed to the proper account or accounts as classified by the stores department. The purchase distribution department then will turn over the invoice to the accounting department.

The accounting department will prepare monthly a Voucher Jacket for each vendor upon receipt of invoice. This Voucher Jacket at this time will have the name of the vendor written in the space provided therefor, and will contain (not attached) the invoices received during such current month pertaining to that vendor. On a suitable date each month—fifteenth or twentieth—the voucher clerk will enumerate the invoices to be included in the voucher on the Remittance Sheet (which is to be forwarded to vendor at time of payment). This Remittance Sheet is to be prepared in duplicate. At the close of the month, the invoices of each vendor will be checked against the Remittance Sheet, after which the latter is footed. The carbon-copy of the Remittance Sheet plus the invoices related thereto will be stapled to the Voucher Jacket. The Voucher Jacket will be given its number (by use of a numbering machine), and the supporting invoices also will be numbered to correspond to the voucher to which they are attached.

The total displayed on the Remittance Sheet will be entered upon the face of the Voucher Jacket and the voucher filed with the unpaid invoices. When the voucher is paid, the date of payment and check number, discounts, and so forth, will be entered upon the face of the Voucher Jacket. The voucher then is filed in its numerical order in the voucher file.

Receiving slips. The pink copy of the Receiving Slip is to be used by the production record department for its records. The

CLASSIFICATION OF STORES

P- Productive Material Stores	G- General Stores	E- Electrical Stores	T- Tool-Room Stores
P- 1 Ball for Lever Handles	G- 1 Belting	E-1 Clamps, Couplings, Conduit, Condulets, Bushings, Lock Nuts, Boxes, Covers	T-1 Tool Steel
P- 2 Bearings	G- 2 Coal	E-2 Cable, Wire, Lamp Cord	T-2 Tool-Room Castings
P- 3 Bushings, including Die Castings	G- 3 Drills	E-3 Electrical Fittings and Fixtures	T-3 Miscellaneous Tool-Room Supplies
P- 4 Castings, Grey Iron and Malleable	G- 4 Grinding Wheels, Polishing Wheels, and Grain Abrasive	E-4 Lamp Bulbs	
P- 5 Castings, Aluminum and Bronze	G- 5 Files	E-5 Miscellaneous Electrical Supplies	January 6, 1925
P- 6 Clutch Linings	G- 6 Gear Cutters and Hobs	E-6 Motor Parts and Contacts	Classification of Stores Chart
P- 7 Forgings	G- 7 Lumber	E-7 Fuses	Copies to
P- 8 Miscellaneous Productive Supplies, Lock Nuts, Lock Washers, Cap Screws, Rivets, Screws, Nuts and Bolts, Gaskets, Packings, Springs, etc.	G- 8 Oils and Gasoline		General Manager Mr. Partridge
	G- 9 Plumbing Supplies		Accounting Department Mr. Hunt Mr. Joseph Mr. Hurd
	G-10 Reamers		
P-9 Stampings (Clutch Disc, etc.)	G-11 Window Glass and Glazier's Supplies		Purchasing Department Mr. Benson
P-10 Steel	G-12 Maintenance Supplies including Pulleys, Hangers, Shafting, Shaft Couplings, Miscellaneous Machine Parts		Manufacturing Control Department Mr. Herowitz
	G-13 Miscellaneous Non-Productive Supplies		Production Record Department Mr. Elwit Mr. Homer
	G-14 Miscellaneous Hardware		
	G-15 Miscellaneous Small Tools		
	G-16 Purchases for Employees		
	G-17 Janitors' Supplies		
	G-18 Paints and Painters' Supplies		

This classification is for the purpose of establishing control of the different groups of stores and will be used by the various departments as follows:

The Purchase Distribution Department will classify by symbol the invoices passing through the Purchase Distribution Record and will recapitulate at the end of each month the total of purchases by classes and symbols.

The Accounting Department will establish separate controls for each class and symbol of stores.

The Stores Record Department will group its Store Cards under each of these classes and symbols.

Requisitions for Material drawn from stores will be summarized monthly under these classes and symbols.

The Purchasing Department will, as far as possible, group its commitments in accordance with the above classes and symbols.

Form 15: Classification of Stores.

original white copy of the Receiving Slip on which the raw material inspectors make their report also is received by the production record department, which compares it with the pink copy; if there is any difference in count, or any note made by inspectors, as to the condition of the material received or quantity registered as defective, this information will be conveyed by the production record

department to the stores record department. The white copy will be stamped by the production record department and by the stores record department and sent to the purchasing department for review and filing. The stores record department will make note of all differences on their "Stores Cards"—quantity, material rejected as defective, and so forth—and see that these are billed to the vendor.

Materials received defective or short. When the inspectors of raw material discover that material has been received short, or is defective, they will advise the purchasing department promptly in full. Defective material will be set aside in their department. The purchasing agent immediately shall issue a memo to bill back to the vendor any shortage or defective material. This memo is routed similarly to any other debit memo issued from the purchase department.

Purchase department memo to vendors. The purchasing agent will issue a Debit Memo for any shortage of material, overcharge in price, defective material, or for any other discrepancy requiring same. This Debit Memo will be handed to the purchase distribution department, which will assign a number thereto and register date, name of vendor, and memo number—omitting for the present the amount and the distribution. This department then will send the Debit Memo to the stores record department in which a requisition will be prepared for the exclusive use of the stores department, transferring the material from the stores to accounts payable. The price on the Debit Memo and the extensions will be checked. Then the Debit Memo will be sent to the accounting department (Mr. Hunt), where same will be reviewed and an invoice issued against the vendor. The original of this invoice is to be sent to the vendor by mail, the duplicate being attached to the Debit Memo and a return made thereof to the purchase distribution department for entry to complete their records. The Debit Memo with the duplicate invoice attached will then be filed with vendor's current invoices, and will be deducted in a current voucher. Should the circumstances be such that the vendor has no present credit for invoices unpaid, the accounting department will take steps to see that the vendor refunds this amount, and will handle the same as an account receivable.

INSTRUCTIONS FOR ISSUING AND ROUTING MATERIAL REQUISITIONS

Copies to:

General manager ..... Mr. Partridge
Mr. Hunt

Accounting department .....Mr. Joseph
Purchasing department .....Mr. Benson
Production record department .....Mr. Elwin
Sundry sales department .....Mr. Hertle

Comment:

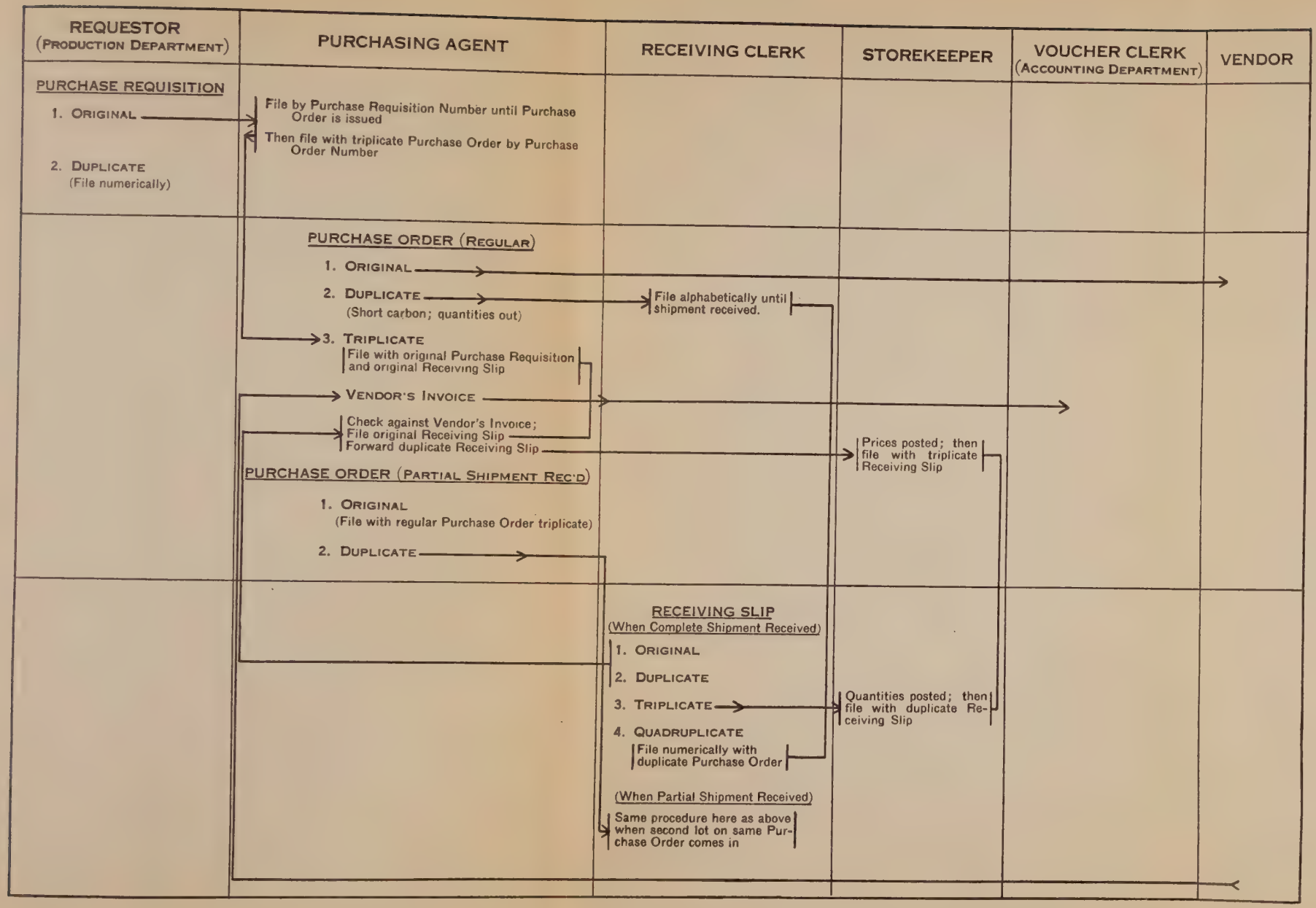
Department heads will transmit to their subordinates the necessary instructions to conform with any changes from present procedure.

Material Requisitions will consist of two classes—productive stock and non-productive materials. There will be an original and duplicate for each requisition. For productive stock, the original will be white and the duplicate yellow. For non-productive materials, the original will be pink and the duplicate blue.

Issuing requisitions. All requisitions will be issued by the production record department. Those for productive stock will be issued upon the request of the planning and routing clerk. The original will be filed immediately in numerical order in the production record departments "Binder of Productive Stock Requisitions Issued." The duplicate will be sent to the stock-room, and the stock-room will fill in the following spaces on the requisition—issued by, date, bin card balance—and will forward this duplicate, together with the material requested, to the department designated under the form caption "delivered to." The foreman of the department receiving the material will fill in the spaces—received by, date—after which this copy of the requisition will be forwarded to the stores record department which will record the issue on its Stores Cards and fill in the spaces—stores record checked, unit price, cost. This department then will transcribe all the information furnished on the duplicate to the original of the requisition, and will file this duplicate copy under the classification which will be required, for Summary of Requisitions at the end of the month, as noted under the caption—"charged to."

The clerk in charge of the Production Ledger will make his entries, as now, from the original copy as soon as placed in the binder. Should any of these Productive Stock Requisitions be issued for material to be charged to shop orders, the shop-order entries will be made from the duplicate copy.

Non-productive materials requisitions. The original copy will be filed in the production record department's "Binder of Non-productive Materials Requisitions Issued," in numerical order. If any of these requisitions affect production, the necessary entry will be made in the Production Ledger. The duplicate copy will go to the stock-room and follow the same course as for productive stock,


REQUESTOR
(PRODUCTION DEPARTMENT)
PURCHASING AGENT
RECEIVING CLERK
STOREKEEPER
VOUCHER CLERK
(ACCOUNTING DEPARTMENT)
VENDOR
PURCHASE REQUISITION
1. ORIGINAL
2. DUPLICATE
(File numerically)
File by Purchase Requisition Number until Purchase Order is issued
Then file with triplicate Purchase Order by Purchase Order Number
PURCHASE ORDER (REGULAR)
1. ORIGINAL
2. DUPLICATE
(Short carbon; quantities out)
File alphabetically until shipment received.
3. TRIPLICATE
File with original Purchase Requisition and original Receiving Slip
VENDOR'S INVOICE
Check against Vendor's Invoice;
File original Receiving Slip
Forward duplicate Receiving Slip
Prices posted; then file with triplicate Receiving Slip
PURCHASE ORDER (PARTIAL SHIPMENT REC'D)
1. ORIGINAL
(File with regular Purchase Order triplicate)
2. DUPLICATE
RECEIVING SLIP
(When Complete Shipment Received)
1. ORIGINAL
2. DUPLICATE
3. TRIPLICATE
Quantities posted; then file with duplicate Receiving Slip
4. QUADRUPLICATE
File numerically with duplicate Purchase Order
(When Partial Shipment Received)
Same procedure here as above when second lot on same Purchase Order comes in

being returned to the stores record department, where the requisition will be priced and the information transcribed in the same manner as for a Productive Stock Requisition; all charges will be posted from the duplicate copy to shop orders, after which this duplicate copy will be filed under the classification as shown under the caption—"charged to."

At the end of the month, the stores record department will make summaries of requisitions issued, one covering productive stock and one for non-productive materials. Each of these summaries will show—amount of money (to be charged in total), to work in process, and to any other classification as shop orders, expense accounts, and so forth. The totals of these charges will be matched with the total of the originals (white copies) as filed in numerical order. Both of these summaries will be made in duplicate, the original being sent to the accounting department to form the basis for this department's charges and credits. The duplicate will be retained by the stores record department for its files. The duplicate copies of requisitions, as arranged by the stores record department, which are not in numerical order, but by order of classification, will be filed away with the carbon-copies of the summaries.

Materials, whether productive stock or non-productive materials, will be issued only upon requisition. If an employee desires to purchase any supplies carried in stock, such employee will make a request to the sundry sales department which, in turn, will request the production record department to issue a requisition for this material. The material will be issued and the requisition will be priced by the stores requisition department and the material will be delivered to the production record department, to which place the employee must apply for delivery of the material desired. This material is not to be delivered to him until he has signed a receipt for it. This receipt will be turned over to the pay-roll department, which will deduct the amount from the next pay, if it is not settled for in cash at the time of delivery. The stores record department will make the necessary entries on the Stores Cards, and send a notice of this to the accounting department so that this latter may make an entry to Sundry Sales account; this charge will be relieved by a cash credit upon receipt of cash, from either the production record department or the pay-roll department.

If an employee desires to have some particular tool or supply specially purchased for him, he will make his request to the sundry sales department, which will authorize the purchasing department to purchase the article. The purchasing department will issue a regular Purchase Order, and on the copy to the receiving room will

note that this material is to be charged to an employee, giving the employee's name and stating that the material should be delivered to the production record department.

The invoice for this material will be classified as "Purchases for Account of Employees," and will be charged to such an account by the accounting department. The stores record department will carry a Stores Card for all such purchases. To relieve this Stores Card, a regular Requisition will be issued, and the same procedure will apply as though the material were in stock. Of necessity, certain supplies, such as gasoline, cannot be delivered to the production record department; each such situation can be covered by an order from the production record department authorizing the delivery.

CLASSIFICATION OF STORES

In connection with revamping the system referred to above, it was necessary to revise the stores classification. The completed chart is illustrated in one of the forms appended to this chapter (see Form 15).

Also, in view of the various changes in procedure deemed advisable, the accountant found it expedient to chart the contemplated method of connecting stores with the controlling material accounts on the General Ledger. This chart, also, is illustrated in one of the forms appended hereto (see Form 16).

Although the above charts are illustrative only, applying to but one particular concern, a close study of them will permit the student to secure some practical ideas of what can be done to clarify a situation which, handled otherwise, undoubtedly would have caused considerable confusion for some time prior to the employees' becoming familiar with the new order of things.

Lastly, although the above instructions appear somewhat detailed, a study thereof should impress upon the mind of the student the fact that all too often something which is perfectly clear to one may not be clear at all to another; hence, extraordinary care should be observed in making certain that every point contemplated in a new scheme of procedure is described adequately in the instructions thereover

so that all who may have occasion to read may comprehend.

If a study is made of these instructions in the light of the general discussion which precedes, it is not difficult to note that except for one or two trifling peculiarities found in this particular business, the report presents a list of the usual desirable requirements for a concern of fair size.

FORMS ILLUSTRATED

All of the forms illustrated in this book should be studied as to their elements and functions rather than as to the printed appearance presented, since the latter, of necessity, must differ for various enterprises.

Illustrative forms of a general nature, as those in this chapter, are offered merely to acquaint the student with them; up to this time in his study of accounting he has had practically no contact with such definite subject-matter. If all who are interested in system construction were as familiar with forms as are those who handle them every day, those of a general nature would be, for the most part, absolutely worthless. But inasmuch as the majority of students have had but slight contact, if any, with actual business in a capacity in which a complete scheme of accounting forms was handled, those of a general nature become an important portion of a text such as this; without them, most of the laboratory problems encountered could not be solved.

Test Questions

1. Define: Perpetual inventory. Describe its use, advantages, and disadvantages, if any.

2. List in order the forms you would suggest for a complete coverage of the purchase activity in a large organization well departmentalized.

3. What routine would you recommend in the checking of invoices of goods or materials purchased?

4. An order is given for the purchase of material. Trace the various operations here entailed from such time until the material is paid for, to protect the company from any possible loss.

5. Define: Loose-leaf system of bookkeeping.

6. What method would you adopt to prevent the improper abstraction of leaves from a loose-leaf record?

7. A concern making baskets buys wood lots, stumpage, logs, and lumber. How would you keep the accounts with these items?

8. As part of your system contract with a small automobile company, you contemplate taking the inventory of raw materials, work in process, and finished goods. Write out your procedure covering this task.

9. What information is necessary where a change from single to double entry is contemplated? Assume the business is that of a wholesale coal dealer, and that you find only a Cash Book, Day Book, and Ledger.

10. What difference, if any, would there be in the point of origin of a Purchase Requisition in a concern manufacturing a standard product as against one which manufactures on special order only?

Problems

(*a*) A wool merchant has entered into an agreement to take 1,000,000 pounds of wool, in the grease, on joint account with the shipper; to have it washed, scoured, combed, and so forth, and sell the product, the profit or loss to be shared equally.

The grease wool is sent to the scourer in lots as received from the shipper and is returned from day to day in smaller quantities as grades A, B, C, D, and E; these lots (or some of them) and combinations of said lots are sent to combers and again returned in smaller quantities from day to day as grades 1, 2, 3, 4, and 5.

The wool may be sold in any form, that is, in the grease as grades A, B, C, D, and E, or as grades 1, 2, 3, 4, and 5.

It will be necessary for the merchant to report the results of the transactions in each lot separately.

Submit a method for keeping a record of this stock and accounts from which proper statements can be made to the shipper showing the loss in the various processes, the quantities sold to whom, prices, and so forth, and the net loss or gain.

(*b*) Outline a system for handling the accounts of a large retail store which are related to valuable jewels and plate, so that possible dishonesty of employees having access to these articles will be guarded against.

(*c*) A concern receives a Debit Memo from a creditor related to the purchase of goods. This memo stands alone, no unpaid invoices from this creditor being on hand. Rule all forms related to its bookkeeping treatment, and show entries required.

(*d*) Design an Inventory Sheet by means of which a complete check may be secured on extensions through the use of a coupon at the right-hand margin which contains an extra column for the extensions.

This coupon may be detached from the main portion of the sheet by means of perforations. Extensions first are made on the coupon; then the coupon is detached, and after this the extensions are made again upon the main portion of the sheet, but without reference to the extended coupon. Upon the completion of the extensions of both parts, the totals are compared.

The sheet number is to be found upon both the main portion thereof and the related coupon. The heading of the Inventory Sheet should provide for showing—date, department, location, called by, sheet extended by, entered by, coupon extended by, priced by, and examined by. The body of the sheet should be columned to hold the following—stock number, description, quantity, unit, price, and extension (one column therefor on main portion of sheet and one column therefor upon the coupon).

The above form would be used in the taking of a periodical physical inventory—as to enable the periodical closing of the books to be carried out.

(*e*) Design a Stores Ledger card that might be used to advantage in a concern manufacturing comfortables—these come in three grades each of which is found in four different combinations of colors. This card is to be used in connection with the finished stock rather than with the raw material or goods in process.

Indicate the procedure you would suggest for the monthly checking of these cards against production completed.

IV

SALES

Sales department organization. Classes of sales activities. Sales Orders. Sales Order Register. Sales Invoice (or Tickets). Sales Journals. Machine-made records. Cash sales. Sundry sales types. Salesmen's records. Selling expenses. Salesmen's expenses and commissions. Distribution of selling expense (and administrative expense) against sales. Sales deductions. Cost of returned sales; procedure.

Although careful purchasing and a low cost of production are essential in making an enterprise successful, the profitable disposal of product is necessary if an undertaking is to survive for any reasonable length of time. Hence, the sales activity of a business must be handled expeditiously, intelligently, and successfully; this can be accomplished, in part at least, only by having sales records which are both efficiently and correctly maintained—as to gross sales and expense.

The accounting system and procedures underlying sales vary considerably, depending, first, upon the class or type of concern in question—as retail, wholesale, mail order, and so forth—and second, upon the particular business involved in the sales problem. Nevertheless, in installing a system, the general idea should be to so display sales and sales expenses that every operation angle in connection therewith may be examined closely.

The purpose of any sales system, as to recording procedures, is to provide the means whereby the profit may be determined on each separate class of sales, and at times even on each and every sale. Sales volume does not necessarily mean that profits are satisfactory. Failure to separate sales and apportionable expenses by product classes may mean that net losses from one class are unknown because they are hidden by the net profit from the others.

CLASSES OF SALES ACTIVITIES

Selling may be divided roughly into the following divisions:

1. Manufacturers who dispose of their product through the channels of some single sales organization—as agent, commission merchant, and so forth. Hereunder, the sole selling expense is commission;
2. Manufacturers who market product through the medium of their own sales organization;
3. Those who are engaged only in general merchandising. In all cases of those with goods to sell, the medium of disposal should be selected only after determining which one is the most profitable under the circumstances.

SALES ORDERS

These should be recorded upon uniform blanks regardless of how a particular sale may originate—personal contact with the customer over the counter, orders received by mail, or orders sent in by salesmen. The number of copies required in a given case depends upon circumstances; inasmuch as one usually is insufficient, two or more generally are necessary.

To illustrate in simple fashion a fundamental variation in the number of Sales Order copies required, consider the following:

1. If but one copy is prepared, this may be filed first as an unshipped order. When the time arrives for dispatching the goods, this form is removed from the file for use in connection with such purpose, after it is marked to show just what has occurred. Next, entry is made in the books of account, and after the Invoice has been prepared therefrom, is placed in a "shipped" file permanently. Perhaps upon shipment the order is turned over to a clerk for the preparation of the requisite Invoice, after which it is passed along to the bookkeeper.

2. If it is assumed that the shipping clerk is some one

other than the bookkeeper, reason exists for the preparation of at least two copies of each Sales Order. The bookkeeper holds one copy, sending the other to the shipping clerk who returns the form to the office upon shipment having been made. The bookkeeper compares this returned copy against the one held on file by him, after which the entries necessary may be booked.

3. If three copies of the Sales Order are desired, two copies may be disposed of as mentioned above, and the third copy may be sent to the customer as a verification.

4. If four copies of a Sales Order are desired, three of them may be disposed of as above, and the fourth may be enclosed with the shipment as a check or shipping list.

5. More than four copies may be used, the variation in allocation depending upon circumstances.

Each set of Sales Order forms should bear a numerical designation. Numbers from 1 to 100,000 may compose a series, the first being prefixed by the letter "A." After this group of numbers has been used up, a second series is started, being prefixed by the letter "B," and so on. Again, the numerical designation may be so arranged that on January 1 of each year, for example, a new series of numbers is utilized. Naturally, each duplicate form carries the same number as its original.

SALES ORDER REGISTER

This is a loose-leaf record utilized to prevent a Sales Order, after receipt, being mislaid and forgotten. It provides for the entry of such information as: Order number; customer; date received; to be filled; date filled; and comments (see Form 17).

SALES INVOICES (OR TICKETS)

After entry upon the Sales Order Register, each order should be sent to the required destination, if necessary,

where its credit terms will be inquired into. An order accompanied by cash requires no credit approval. Next, the order passes along to where it is interpreted—as the order department; here, the required interpretation markings are affixed so that it may be filled properly. Following this, a clerk prepares the requisite number of copies of the invoice form; the posting against each customer is done directly from one of these copies which, collectively sorted in numerical order, may compose the Sales Book. Again, the information displayed upon these tickets as summarized upon some sort of a Recapitulation Sheet (or Sales Journal) is the basis for the General Ledger entries.

The information contained on a Sales Invoice (or Ticket) should be such as will permit the proper sales analysis being prepared. The fundamental sales classification scheme is reflected by specific markings contained on, or by the paper color of, these Invoices or Tickets; preferably, a color scheme lends itself to the doing of more rapid work than does the marking expedient, inasmuch as sorting is facilitated under the former method.

SALES JOURNALS

Where a business sells a half-dozen or more classes of goods, and it is desired to have sales analyzed into corresponding groups, the Sales Record must contain at least a minimum of one distribution column for each class of sales in force. In expanding the Sales Journal into a multi-column Sales Distribution Record, the "amount" columns commence with one which holds totals so that each page, or group of pages, may be proved, as to distribution totals, against such "total" column.

Inasmuch as it is highly desirable to compare the profitableness of each line of goods with the others, of each subdepartment or branch with the others, and of territories and salesmen, considerable thought should be given to the sales classification scheme and to the relationship thereof with

that of purchases and expenses. Naturally, in this connection, each business and the nature of the goods sold thereby present specific problems which, although not usually difficult, must be given serious thought apart from general principles alone. The classification may be in a number of ways, the following being illustrative:

1. A general or detailed grouping by classes;
2. A grouping which fundamentally distinguishes between sales of goods fabricated and those which have been purchased for sales purposes;
3. A grouping which will separate sales as to cash sales and sales on credit, branch sales and main office sales, regular sales and instalment sales or consignment sales, and so forth;
4. And so forth, as desired.

As a general rule, the sales classification for a particular concern is not extensive—not nearly comparable to that required for purchases, inasmuch as "purchases" include numerous items not related directly to goods or material purchases. If the sales are not numerous, the entire classification therefor may be spread upon the Sales Record, but if the opposite is true, some sort of an underlying analysis record may prove essential upon which each sale is shown in detail or upon which only daily group totals are displayed (see Forms 18, 19, and 20).

MACHINE-MADE RECORDS

Inasmuch as the methods for recording sales should depend upon the nature of each particular concern and its volume of business, no specific standard practice can be suggested. In every instance, that which is suggested should be as simple as possible, and where sales are of sufficient volume to warrant the suggestion, machine methods should be utilized, looking toward an economy of labor effort.

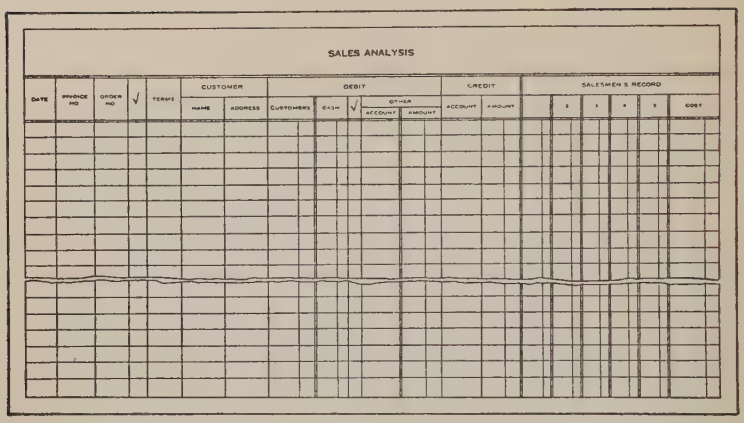
In a small organization in which the usual monthly billings average about 1,200 in number, far greater simplicity

SALES ORDER REGISTER

ORDER NO.	CUSTOMER	DATE RECEIVED	TO BE FILLED	DATE FILLED	COMMENT
00					
01					
02					
03					
04					
05					
06					
07					
08					
09					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					

Form 17: Sales Order Register.

in handling sales is possible than in a business which mails out some 15,000 bills each month. On the one hand, the records may be so prepared as to permit of one machine operative combining all the requisite operations through the use of duplicate forms, each set being filled out, say, in one operation of a billing machine. For example, the Invoice, Sales Sheet, and Ledger analysis may be prepared at one operation; further, a simple means may be utilized by which


SALES ANALYSIS

DATE	INVOICE NO	ORDER NO	√	TERMS	CUSTOMER		DEBIT				CREDIT		SALESMEN'S RECORD					
					NAME	ADDRESS	CUSTOMERS	CASH	√	OTHER ACCOUNT	OTHER AMOUNT	ACCOUNT	AMOUNT	1	2	3	4	5	COST

Form 18: Sales Analysis.

such clerk will include for each sale, in the analysis, the cost thereof. On the other hand, in a business of considerable size, separate departmental divisions must be established in each of which some portion of the sales recording procedure is handled.

When the invoice is prepared, as many of the other records as possible should be filled out as copies thereof. By so doing, accuracy is secured as between the components of the various sheets.

CASH SALES

However recorded, the fraud possibility must be guarded against—as by the use of cash registers, and so forth. Some of the means of fraud elimination, related to system construction, are commented upon in a later chapter.

Inasmuch as cash sales usually are found even where sales are mostly upon a credit basis, it is required ordinarily to record them in connection with credit sales. If all sales are for cash, no question exists of whether or not the classification therefor should tie into the cash records, this being taken for granted. On the other hand, where credit and cash sales are found, one may encounter a practical difficulty not always solved by the generally accepted theory that all

sales should be found in the Sales Register. Theoretically, it may be poor practice to credit Sales account through the Cash Receipts Record, to the end that this procedure should be avoided whenever possible. Nevertheless, many small concerns are encountered in which it seems absolutely impossible to have the bookkeeper comprehend intelligently the scheme of passing all sales through the Sales Book; in these cases, it may be desirable to have cash sales reflected columnarly on the Cash Book so as to secure some semblance of correctness in the bookkeeping procedure. Naturally, this suggestion assumes that it is impossible to have an existing bookkeeper replaced by one with a better knowledge of the correct application of principles. Again, if the situation is sufficiently satisfactory, cash sales may be recorded in a separate Sales Book.

Cash sales are considered further in the next chapter which relates to cash handlings.

SUNDRY SALES TYPES

Sales to the proprietor may be handled either through the Sales account or through the Purchases account, the idea in each case being to so book such items that the gross profit will be stated correctly. Where these sales are of frequent occurrence, the credit may be made at cost to Purchases so as not to inflate gross profit.

Sales on c.o.d. are not to be treated as regular sales, inasmuch as although goods are sent out for purposes of delivery, delivery cannot occur until cash has been received in payment. In sending goods to out of town points, a considerable length of time elapses between shipping date and date of receipt of the money collected; also, those who deliver c.o.d. packages and make collections locally may not account for the proceeds until some day later. Hence, a separate means of booking is in order, one which will show the specific accountability of persons to account for the proceeds from such sales, and which will not inflate regular

sales with c.o.d. items for which cash has not been received.

Three illustrative methods of handling c.o.d. sales are here given:

1. The Sales Book and the Cash Book are each provided with a c.o.d. column, and a Ledger account with c.o.d. sales is carried to take care of those outstanding and uncollected. When infrequent in number, the postings to the Ledger account may be made in detail, each related debit and credit being placed on the same horizontal line; but when numerous, the postings to this account may be in monthly totals, a memo book being used in which to record the detail of shipments and collections.

2. For local deliveries, c.o.d. packages may be charged to drivers upon a Route Sheet when taken from the shipping room; credits hereto occur when undelivered bundles are returned, and when cash is turned in. The original delivery slip (Sales Ticket) is pasted upon a card so marked in red letters that confusing these packages with others will not occur except through carelessness. A Route Ledger may be used in connection with the Route Sheet.

3. A c.o.d. sale is treated as a regular sales, except that therefor the ticket is retained in duplicate. When a driver takes out one of these packages, one of these tickets is signed, turned in, and treated as cash in drawer. When the actual cash comes in, the signed tickets involved are turned over to the driver for destruction.

When goods are sold upon an instalment basis, it may be feasible to so record these sales that each year's profit will include the profit thereon proportionate with receipts actually taken in. In other words, if the profit on such a sale amounts to 50%, then 50% of each receipt represents profit, and the records must be so maintained that clearances in accord with this idea will be possible.

Sales for future delivery should cause no trouble beyond that of making it necessary to provide for a deferment of a portion of the selling expenses, proportionate to this type or class of sales, provided the amount involved is of sufficient importance. Completed goods on hand, held for future delivery, are part of establishment inventory.

Sales on approval, common to department stores, should not become part of regular sales until after a definite period

of time has elapsed, at the end of which approval goods are still outstanding. Goods out on approval are part of inventory.

Goods sent out on consignment are not regular sales, and must be accorded a treatment which will show the fact that the consignee has not purchased these goods from the consignor.

Sales to branch establishments, sender and receiver being parts of the same organization, are not regular sales, regardless of whether they are billed at cost, at sales price, or at a fictitious amount; the system must provide for showing this distinction. Transportation charges to branches usually are not taken up, in any way, as part of inventory, yet where the item assumes large proportions it should be considered as enhancing the value of the stock, but only in an amount that actually is representative.

Sales based upon coupon books must be so handled that the outstanding redemption liability is shown at the close of each year. Actual sales have not occurred except as measured by coupons redeemed.

SALESMEN'S RECORDS

Altogether too often one encounters a business in which the salesmen are paid a specified sum of money for their services and nothing more. Naturally, this policy takes

RECORD OF CHARGES BILLED

DATE _____

ORDER NO.	NAME	ADDRESS	AMOUNT

Form 19: Daily Report of Billings to Customers.

away what may be considered as sales stimulus, at least that which is productive of results to a far better degree than anything else. Then, again, if salesmen are paid upon a commission basis, which they should be, in order to react to the stimulus as mentioned above, the error is made usually of grounding such practice upon gross sales rather than upon actual profits made. The latter basis of paying commissions is far more intelligent than any other.

The right type of sales records is essential if commissions are to be calculated properly and accurately. Further, even if the salesmen have no commission interest in sales, the proper records will permit of a comparison of individual efficiency to be made, upon which either salary increases or promotions may be based.

SELLING EXPENSES

These must be distinguished from what may be considered as sales deductions. Selling expenses relate to the actual marketing of goods, whereas sales deductions are allowances which must be granted customers in order that they will be satisfied with what they have purchased. This distinction is necessary inasmuch as from the accounting view-point each of the above appears in a section of the Profit and Loss Statement different from that in which the other is to be found.

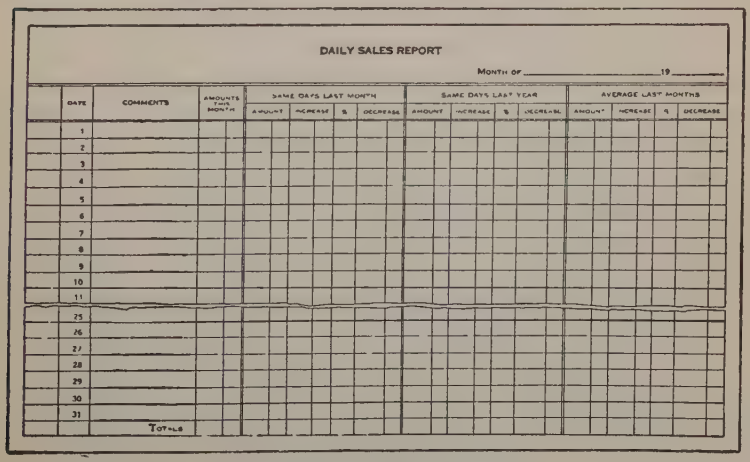
Under certain circumstances, packing is a selling expense, whereas under others it is not to be thus treated. Anything which is part of the product in such a manner as to be used for purposes of identifying such product as against some other kind is a cost-of-sales item, not a selling expense. Thus, the paper container in which a pound of coffee is sold to the dealer is a cost, whereas the pressed paper carton holding a dozen or more pound units is a selling-expense item. Again, the distance over which goods must be shipped is responsible for a differentiation. Ordinarily, packing for purposes of shipment is a selling expense, but where a considerable

difference exists as between packing costs for a local market and one a thousand miles away, grounds exist for allocating a portion of the packing cost in the latter instance to some place other than selling expenses—probably sales deductions.

Breakage may or may not be a selling expense. If it is linked with the distance over which goods must travel, or with transportation facilities, it may be considered as a selling expense. On the other hand, if breakage is related intimately to the kind of goods handled—the product perhaps being of a fragile nature—it seems the better practice to treat such breakage as a sales deduction.

DISTRIBUTION OF SELLING (AND ADMINISTRATIVE) EXPENSE AGAINST SALES

Manufacturing cost has no connection with selling and administrative expenses, inasmuch as the cost of manufacturing is neither increased nor decreased whether sales are made or not. Nevertheless, for price purposes, these expenses must be considered; hence, some means must be used to add selling and administrative expenses to manufacturing cost so that prices may be determined with some semblance of



DAILY SALES REPORT

MONTH OF _____ 19____

DATE	COMMENTS	AMOUNTS THIS MONTH	SAME DAYS LAST MONTH				SAME DAYS LAST YEAR				AVERAGE LAST MONTHS			
			AMOUNT	INCREASE	%	DECREASE	AMOUNT	INCREASE	%	DECREASE	AMOUNT	INCREASE	%	DECREASE
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
25														
26														
27														
28														
29														
30														
31														
	TOTALS													

Form 20: Daily Sales Report.

correctness. Whatever method of distribution is used will be arbitrary. Fundamentally, such distribution is based upon direct labor cost, or upon total cost of product sold, the latter being preferable. Such preference is due both to the fact that the distribution rate is readily securable, and because it may be assumed that a relationship exists between cost of product sold and these expenses.

As soon as the distribution basis has been decided upon, it is necessary next to determine the rate thereof, doing so with the fact in mind that sales may be classed as both simple and complex, depending upon conditions.

Where only two products are fabricated, for example, and the selling conditions surrounding each are practically similar to those surrounding the other, the distribution rate may be based upon the percentage relation which exists between selling and administrative expense and the cost of the product sold during the period. The total of these expenses divided by the cost of manufactured product sold gives a rate which, added to production cost, represents the cost to make and sell the particular article in question. When the desired rate of profit is added to the figure representing the cost to make and sell, the selling price of the item is available. If this distribution rate is determined at the close of the year, an intelligent basis is secured for operating during the ensuing period.

On the other hand, where several classes of product are manufactured, and some require more selling expenses than others, a general average rate is not feasible, since those goods requiring a small amount of sales expense will be burdened excessively. Hence, a method of rate calculation must be adopted which is fairly elaborate. To begin with, the business under scrutiny must be known intimately, inasmuch as certain sales expense items must be apportioned by estimates, although certain of the charges will be definite.

It should be remembered, however, that oftentimes the fixing of a selling price is determined by marketing conditions rather than by anything else.

SALESMEN'S EXPENSES AND COMMISSIONS

The amount of these expenses should be dependent more upon results than upon anything else. Records should be available, therefore, to determine whether it is the efforts of a salesman that secure his year's orders or the territory through which he travels; whether most sales are made of goods that it is desired should be sold, or of goods the company does not aim to push.

As stated above, commissions should be determined and set in relation to profits made on lines sold rather than upon any other basis. A straight commission contract always tends to make a salesman follow the line of least resistance and push the easy sellers. Nevertheless, if commissions are based upon line profits, considerable record work is necessary by means of which accurate and detailed costs may be compiled. In one concern, for example, a separate department was installed for this purpose, and a battery of some 35 electrical calculating machines is operated every day in an attempt to secure the data deemed essential.

SALES DEDUCTIONS

In addition to the possible sales deductions which have been mentioned above, those of more every-day occurrence are the usual ones of returns, allowances, and trade discounts. Goods not accepted by the purchaser represent returns, whereas if the buyer has a right to return goods and is persuaded not to do so, the adjustment of the matter is handled by granting an allowance. At present, trade discounts are looked upon as being productive of considerable trouble. If such a discount is granted for purchases made by a customer in excess of a certain quantity, sufficient grounds exist for maintaining that it has usefulness; but where a trade discount is presumed to reduce a list price to a real price, its usefulness is decidedly questionable.

The granting of credits and allowances is looked upon as

being most unimportant, when, as a matter of fact, the promiscuous granting therof has considerable to do with the profit outcome of a business. Credit Memos should not be issued except after careful inquiry into the merits of each situation, and then such issuance should be safeguarded as carefully as that accorded checks. Further, the facts related thereto should be so recorded that it will be possible to secure an analysis thereof which, in connection with the business of each customer, will show whether or not the account is handled at a profit or at a loss.

COST OF RETURNED SALES: PROCEDURE

In a manufacturing establishment the proper handling of sales returns may present a problem of fair proportions. Fundamentally, when goods are returned, provision must be made for receiving them, for recording their receipt, and for giving the customer the necessary credit involved.

When a customer writes in that goods are being returned, the sales department prepares a Return Sales Notice in triplicate. The original goes to the accounting department, the duplicate to the receiving clerk, and the triplicate to the warehouse. The quantity being returned is shown only upon the original. When the returned goods arrive, the receiving clerk checks them against his notice copy, after which the goods are sent to the warehouse and the copy of the notice is forwarded to the accounting department. At the warehouse another checking-in is made against the notice copy there filed, the goods go into stock, and the copy of the notice is sent to the accounting department. The accounting department compares all three copies of the notice, investigates discrepancies, and makes the necessary corrections on the original copy of the notice (see Form 21).

Next, a Credit Memo is issued in duplicate, the customer receiving the original and the duplicate being filed in a Return Sales Binder. At this point, the usual entry is in or-

RETURNED GOODS REGISTER

DATE	DESCRIPTION	RECEIVED INTO STOCK BY	REASON FOR RETURN	BY WHOM RETURNED	CR CUSTOMER	DR DEPT A	DR. DEPT B	APPROVED

Form 21: Returned Goods Register.

der, calling for a credit to the customer and a charge to Return Sales and Allowances account.

Subsequently, another memo form is issued in duplicate by the accounting department, the original being the authority to take up the return in the Finished Goods Ledger. Monthly, the duplicates are summarized for the purpose of setting up the General Ledger accounts thereto related—as:

Dr. Finished Goods
Cr. Cost of Sales (manufactured product)

Frequently, goods are returned which are defective. Such product may be put into condition for resale or it may be

so defective that it must be scrapped. Nevertheless, since at this moment it is not always possible to ascertain just how much of a return must be scrapped—at least until after factory inspection—the original cost is entered, in each instance, upon a Production Order, this authorizing the necessary repairs to be made. Of course, the first entry must give the customer credit (at sales price, say) as already shown. The next entry, however, places these goods back in the factory—for example:

Dr. In Process
  Cr. Cost of Sales (manufactured product)

As repairs are made, the Production Order accumulates thereon the cost thereof. When the work is completed, entry must be made to take up the following facts:

Dr. Finished Goods (original cost)
  Defective Work (repair cost less scrap)
  Scrap Stores
    Cr. In Process

Where goods are returned because of misunderstanding, delivery not called for, excessive deliveries, delayed deliveries, and so forth, the cost of repairing or of refinishing to place in resale condition is a selling expense, rather than one chargeable against manufacturing. A Production Order is issued as previously shown, the entries hereunder being as before. Upon completion of the necessary work thereon, entry must be made to take up the following:

Dr. Finished Goods (original cost)
  Selling Expense (repair cost)
    Cr. In Process

FORMS ILLUSTRATED

The forms in this chapter offered for purposes of illustration should be regarded as representative only; the list is not complete. It is believed, however, that the student has been given sufficient of them to assist him to material advantage in the solution of some of the situations found in the

questions and problems. The size of the various forms in this book is suggestive only; similar ones in a given situation may be expanded or reduced at will.

Test Questions

1. A certain automobile company adopts the policy of making a refund to each purchaser during the succeeding year, if a stated number of machines were sold during the year. You have been asked to determine what records are necessary and how these should be kept so that the least inconvenience will be experienced at the close of the year when this refund is made.

2. Illustrate how you would handle goods sent out for sale or return.

3. Suggest a plan whereby a department store might record adequately its instalment sales transactions.

4. A concern located in a village and employing 400 people furnishes them with coal, wood, and ice at cost, collecting therefor in weekly instalments. Describe the best method of keeping the accounts.

5. A manufacturing concern with 10 branches in different cities wishes to keep all the accounts at a central office and to know the separate results of the trading of each branch. Describe how the sales transactions might be dealt with, the goods being delivered direct to customers from each branch, and occasionally remittances from customers being there received.

6. A retailer, who employs four salesmen behind the counter, sells mostly for cash, but a limited amount on credit. Describe the simplest way in which this merchant may conduct his books relative to the handling of these sales. Assume that he knows nothing more than what is a debit and a credit, and that he can post to the Ledger.

7. Give several methods of keeping accounts with infrequent customers.

8. Describe as many forms of the Sales Ledger ruling as you can, explaining the advantages of each.

9. A wholesale grocery house has several outdoor salesmen, both in and out of the city, who are paid commissions on their sales. What are the danger points to be noted, and how would you arrange the books and accounts to protect your client against the payment of commissions not earned?

10. All outgoing bills in a plumbers' supply house are press-copied and posted individually to the customers' accounts, the

monthly aggregate of sales being credited to Merchandise account. Many customers have charges daily or oftener. Suggest a change in method that would lead to a more intelligent statement of results, would save labor, and avoid congestion.

Problems

(*a*) Submit rulings for a correlated Cash Book and Sales Book, sales being classified under four divisions, each of which may be either on a charge or cash basis. Present, also, the *pro-forma* monthly closing entry or entries covering the above.

(*b*) A manufacturing company ships its product in packages costing 10 cents each. They are charged to the customer at 15 cents but subject to credit when returned in good order at same price as charged. Rule the various records needed by this manufacturer in order to treat these container transactions correctly.

(*c*) A restaurant is operated in connection with a catering business. The business done each year is in the neighborhood of $20,000, of which amount perhaps a third is from the restaurant. The restaurant does a strictly cash business, but most of the catering work is done on time. Design all records which relate to the sales features of this activity.

(*d*) A manufacturer produces three kinds of product, which are sold both for cash and on credit. The credit customers, however, do not number in excess of six; sales discounts are offered them, these being regularly taken. Design a Sales Register which will meet this situation.

(*e*) Upon the basis of the facts of problem number (*a*) above, revamp the Sales Book required to include a supplementary distribution of sales among five salesmen's accounts.

V

CASH

Purchase versus payment. Invoices subject to discount. Check payments: ordinary treatment. Check payments: modern treatment. Pay-roll payments. Disbursement records. Cash receipts. Accounts Receivable. Cash receipt records.

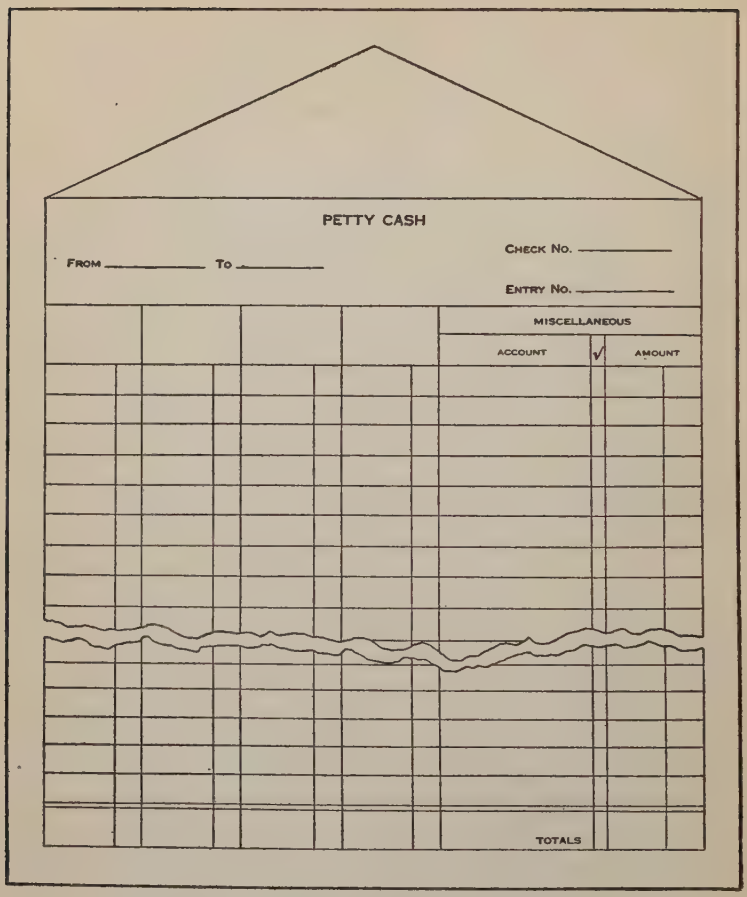
THIS chapter reviews briefly some of the fundamental principles related to cash income and outgo, the outgo angle first being taken up. The underlying principles of cash treatment are similar in practically every case, these not being primarily dependent either upon the nature of a particular concern or upon its size.

PURCHASE VERSUS PAYMENT

Between the functions of purchasing and paying there must exist a close coordination, inasmuch as it is not to be expected that goods will be bought unless the prospect of paying for them is present. On the one hand, these functions may be merged in one individual, whereas, on the other, they may be found each in the hands of a separate department, each department being composed of one or more persons. If a close contact of these two functions is not in evidence, considerable difficulty may be experienced; in a concern of fair size, purchase commitments may be entered into without any thought being given to how they are to be financed. Commitments in excess of the limits set always should have their financing arranged beforehand.

INVOICES SUBJECT TO DISCOUNT

When an invoice is ready for payment, this being evidenced by having attached thereto some form showing just



Form 22: Petty Cash Analysis Envelope.

what have been the actual receipts thereunder, it is necessary, first, to classify such invoice as to whether or not it carries a cash discount for payment within a certain number of days; some are subject to discount, whereas others do not carry this privilege.

All invoices with a cash discount privilege should be so handled that this discount always is taken. If ready cash is not available with which to discount bills, arrangements

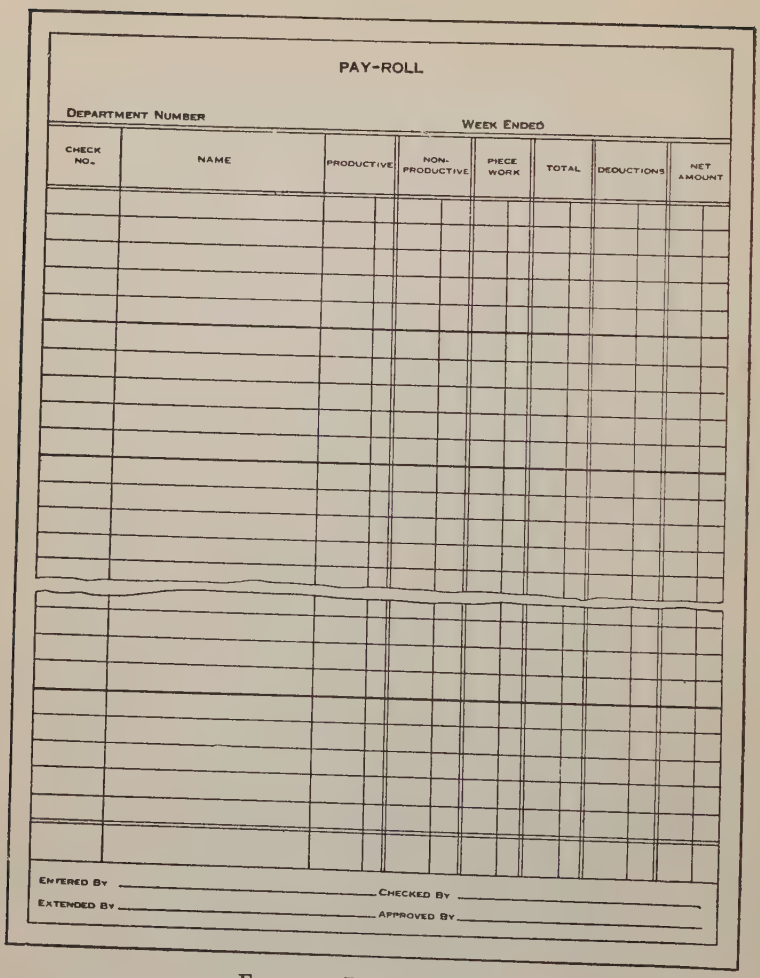
should be made for a bank loan so that this may be done. Since the interest equivalents of cash discounts in a year's time are considerable—2% 10 days, net 60 days approximately being 15% a year—a failure to take advantage of them seems reasonable ground for assuming at once that the management is nearly "dead from the neck up."

When an invoice has been forwarded from the purchasing department for payment purposes, it should be filed properly with regard to its discount possibilities; this may be either alphabetically or according to its maturity. In the first instance, some card record is necessary by means of which the maturity date of each invoice appears automatically; on the other hand, where a maturity file is used, its contents should be arranged fundamentally as between invoices carrying discount terms and those not carrying them.

The invoices to be paid each day should show up automatically. After the checks have been drawn therefor, each should be marked as "paid" and then be filed away as such. Invoices without a discount allowance should not be paid promiscuously. Some scheme of payment dates should be arranged under which the full credit term for each invoice will be utilized—probably it will be sufficient to pay but twice a month. By adopting a payment method similar to this, a business is enabled to secure as large an amount of bank interest as is possible upon average balances; also, where these invoices are paid under a definite pay-day plan, the person signing the checks need not be bothered with this duty at odd times—attention to little things of which this is an example promotes organization efficiency.

CHECK PAYMENTS: ORDINARY TREATMENT

The general type of check more or less familiar to all persons is prepared in a bound book, each sheet containing from one to five forms and each with a certain amount of stub space at the left for entering a copy, in summary form, of the information set out upon each check.



PAY-ROLL

DEPARTMENT NUMBER

WEEK ENDED

CHECK NO.	NAME	PRODUCTIVE	NON-PRODUCTIVE	PIECE WORK	TOTAL	DEDUCTIONS	NET AMOUNT

JONES MANUFACTURING COMPANY
SYRACUSE, NEW YORK

PAY-ROLL CHECK
NUMBER _____

PRODUCTIVE LABOR	NON-PRODUCTIVE LABOR	PIECE-WORK	TOTAL	DEDUCTIONS	NET AMOUNT
$	$	$	$	$	$

PAY TO THE ORDER OF _____

TO THE
SECOND STATE BANK
SYRACUSE, NEW YORK

JONES MANUFACTURING COMPANY

FIRST VICE-PRESIDENT

TREASURER

Form 24: Pay-Roll Check.

The deposits may be so entered upon the Check Book stubs that the complete total is displayed opposite the next undrawn check. Likewise, the total of the checks drawn during any period, as shown by the stub record, should be carried forward from page to page until the Pass Book has been balanced and the reconciliation prepared—as at the end of each month. The total of checks drawn is deducted from the total deposits made, and after sundry adjustments have been given consideration, the new balance is brought forward upon the reverse side of the stub opposite the first check to be drawn for the next month. A simple calculation is all that is required to determine the bank balance at any specified moment of time.

If one should prefer to show in the Check Book at all times the balance against which withdrawals can be made, a special column should be provided at the left of the deposit detail in which additions may be made of the total of each deposit and deductions of each check drawn. This manner of treatment, however, is not recommended.

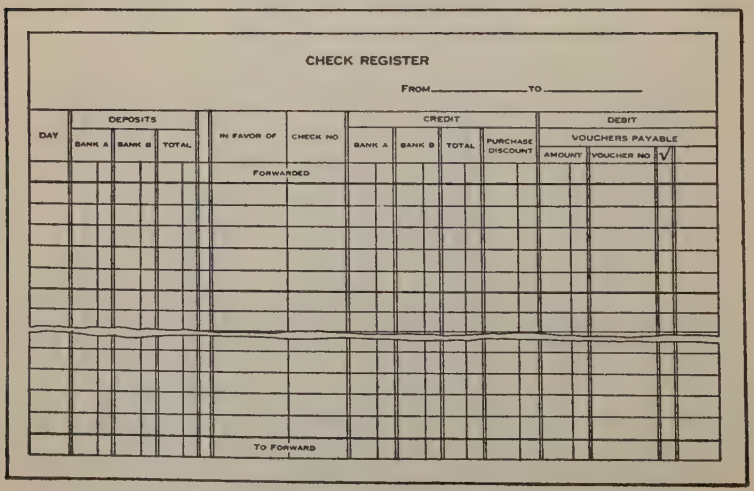
The method of totaling the checks separately from the deposits is preferable to that of maintaining a running balance, since thereby the amount of the bank balance is not readily available to curious eyes; further, should an error creep into the computation of securing each total, the required changes will not be as many as when each check has been subtracted from the balance on hand, such balance being figured each time a check is drawn.

CHECK PAYMENTS: MODERN TREATMENT

The usual form of bank check is found in a great many businesses, some of them of fair size. Even though one may wax enthusiastic over some of the many new forms of checks available, and over their possibilities of treatment, it is to be remembered that not every concern using the ordinary form of bank check should be criticized adversely. Perhaps, upon investigation it will be discovered that in a particular case it does not pay to have a specially designed check.

Some of the so-called modern ways of handling the check situation are commented upon below.

When cash entries are few in number, the Check Book stub may be made a little larger than usual, and be so ruled that it replaces the Cash Book page. In other words, a Check Book thus ruled takes the place of the regular Cash Book. It should provide the dates listed on the opposite page. As checks are drawn, the amounts are entered respectively upon the face of the stub ruling, and, when cash is received, entry is made therefor upon the reverse side of the stub. All cash received must be deposited intact if the record


CHECK REGISTER

FROM _____ TO _____

DAY	DEPOSITS			IN FAVOR OF	CHECK NO	CREDIT				DEBIT		
	BANK A	BANK B	TOTAL			BANK A	BANK B	TOTAL	PURCHASE DISCOUNT	VOUCHERS PAYABLE AMOUNT	VOUCHER NO	√
				FORWARDED								
				TO FORWARD								

Form 25a: Check Register.

is to be used correctly. Postings are made in the same manner as though the book were a Cash Book.

Face of stubs—checks drawn:

Date
Explanation
L. F.
Gross
Discount
Net

Reverse side of stubs—receipts:

Date
Explanation
L. F.
Gross
Discount
Net

Where the checks are numerous, and are drawn by hand, a carbon-copy of each one may be retained instead of consuming time in filling out the stub. In a Check Book of this type, a leaf of blank paper is bound in behind each sheet of checks. There is nothing printed upon this blank except the numbers of the checks composing the sheet in front, these being spaced one for each check. Daily entries are

CHECK REGISTER

From To

DATE	TO		CHECK NO	VOUCHER NO	CREDIT		DEBIT					DEPOSITS	BALANCE
					NET CASH	PURCHASE DISCOUNT	ACCOUNTS PAYABLE	NOTES PAYABLE		MISCELLANEOUS ACCOUNT	MISCELLANEOUS AMOUNT		
	ACCOUNT NO												
	FORWARDED												
	TO FORWARD												

Form 25b: Check Register.

made in the Cash Book from the information displayed on each duplicate sheet. The fact that the carbon-copy of each check is apt to be indistinct may cause errors to be made when the Cash Book entries are prepared. In connection with the above, a daily summary may be prepared of checks issued in accord with the account classification in force, so as to avoid the making of detailed entries upon the Cash Book. Again, a copy of the check often serves the purpose of a Voucher Jacket.

The saving of labor alone, which is not securable in the preparation and entry of the ordinary check, has made the modern form of Voucher Check popular. Voucher Checks come in a variety of forms, and in choosing the one to use, the guiding principle is more apt to be desire or taste than anything else.

Preferably, Voucher Checks are unbound, anywhere from one to five being found per page, dependent upon design. Where, say, five are found to a sheet, each may have a stub attached thereto, perforated for purposes of later detachment. The stub data are typed on, the final amount shown to be the same as that for which the check proper is drawn. The check, with stub attached, goes to the creditor, who detaches this prior to depositing such check. The stub is utilized merely as a statement showing what items are covered by the payment made.

The name and address of payee may be so located as to make feasible the use of a window envelope. A duplicate of each check is prepared by the use of carbon-paper, each such being punched for binding purposes and so ruled as to take care of allowances, discounts, and so forth, so that when placed in a binder, a Check Register results, if desired.

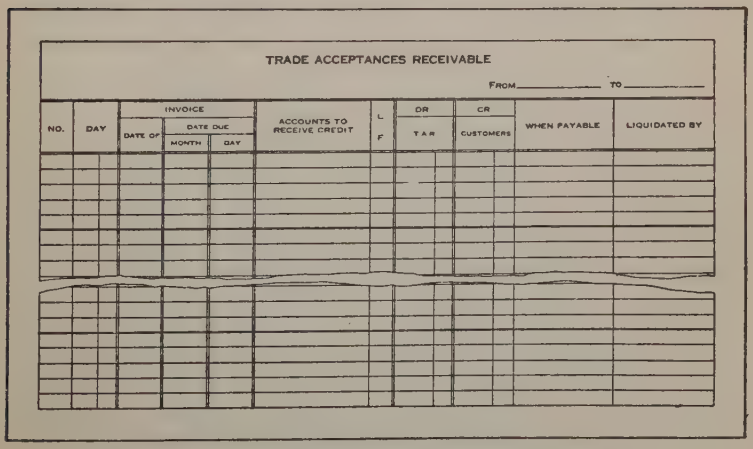
Another form of Voucher Check contains a space at the left for the entry of whatever data seem essential, but without the detachment feature connected therewith. Such a check presents all the advantages of a receipt, but its preparation is even more laborious than that of the old-style check and, hence, subject to just as much criticism, if not

more of it. Again, a Voucher Check may be of a size just double that of an ordinary one, the upper half being the check proper and the lower half the statement of account. This form is cumbersome and causes considerable trouble in banks, even if folded horizontally half-way up. Again, the statement of account may be included upon the reverse side of the check.

In the preparation of check forms, provisions should be made for the inclusion of at least two signatures—signature and counter-signature; some may carry more than two, but this seems unnecessary. Further, the writing of a check, except for the words covering its amount, may be done upon a typewriter; those words specifying the amount should be written in by some one of the numerous check-protecting machines on the market.

CASH PAYMENTS

Small bills should be paid in some manner akin to that involved in the operation of a petty cash fund; perhaps a reasonable limit will be set, below which such payments are made and beyond which checks are used in the ordinary

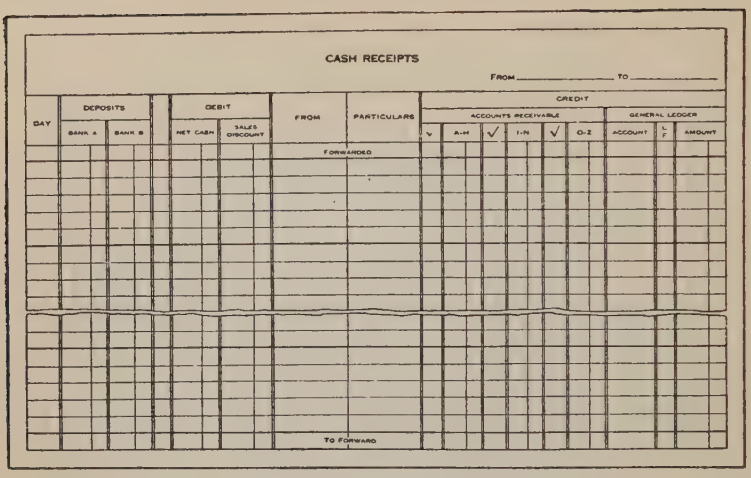


TRADE ACCEPTANCES RECEIVABLE

FROM _____ TO _____

NO.	DAY	INVOICE			ACCOUNTS TO RECEIVE CREDIT	L F	DR	CR	WHEN PAYABLE	LIQUIDATED BY
		DATE OF	DATE DUE MONTH	DATE DUE DAY			T A R	CUSTOMERS		

Form 26: Trade Acceptances Receivable Register.


CASH RECEIPTS

FROM _____ TO _____

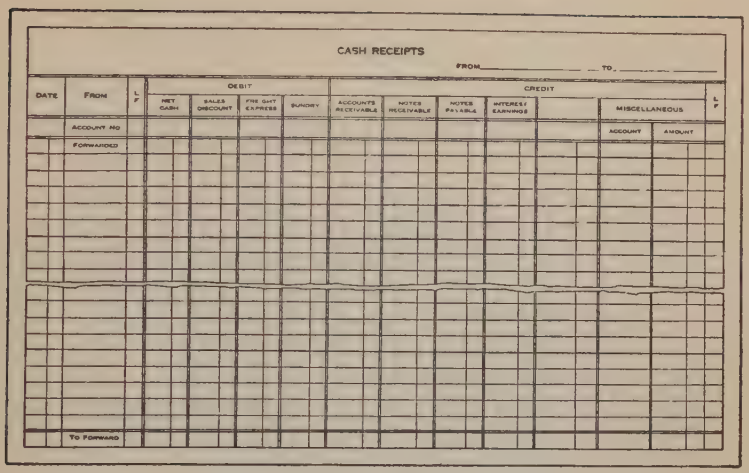
DAY	DEPOSITS		DEBIT		FROM	PARTICULARS	CREDIT								
							ACCOUNTS RECEIVABLE						GENERAL LEDGER		
	BANK A	BANK B	NET CASH	SALES DISCOUNT			✓	A-H	✓	I-N	✓	O-Z	ACCOUNT	L F	AMOUNT
						FORWARDED									
						TO FORWARD									

Form 27a: Cash Receipts Record.

way. Frequently, as where this limit, say, is $10, a separate bank account, as a working fund, is utilized by the cashier to carry on the scheme. Checks not in excess of $10 are drawn against this account, and, when the fund is depleted, the canceled checks are audited, after which the fund is restored in the amount of the vouchers available.

Where the usual form of petty cash fund is in operation, payments therefrom being made in currency, provision should be made for the coverage of each such disbursement by a receipt—a Petty Cash Voucher of some type. When the fund is to be replenished, these vouchers are analyzed, distributed by accounts, and turned over to the treasurer or cashier for Cash Book entry. Frequently, this analysis and accompanying vouchers form the basis of an entry upon the Voucher Record. The analysis and distribution sheet may assume an envelope form in which the related vouchers are placed (see Form 22).

Regardless of the method employed, careful thought must be given to the possibility of the elimination of fraud. It is not perhaps going too far to intimate that in the majority of small- or moderate-sized concerns the petty cashier soon-


CASH RECEIPTS

FROM _____ TO _____

DATE	FROM	L F	DEBIT				CREDIT						L F
			NET CASH	SALES DISCOUNT	FREIGHT EXPRESS	SUNDRY	ACCOUNTS RECEIVABLE	NOTES RECEIVABLE	NOTES PAYABLE	INTEREST EARNINGS		MISCELLANEOUS	
	ACCOUNT NO											ACCOUNT / AMOUNT	
	FORWARDED												
	TO FORWARD												

Form 27b: Cash Receipts Record.

er or later is discovered peculating from the petty cash fund —if the elimination of fraud has not been given serious thought.

PAY-ROLL PAYMENTS

In practically every concern the pay-roll presents a problem never adequately solved. The larger the business, the greater the possibility for inaccuracy and fraud—the proper accounts must be charged therefor and the right amount of money must be disbursed to those entitled thereto.

Perhaps the most common fraud in connection with a pay-roll is the inclusion thereon of dummy employees, due to collusion between shop foremen and pay-roll clerks. The actual stealing of pay-roll cash or of inflating pay-roll totals is detected so readily as not to merit comment at this point.

Whenever possible, labor should be paid by check—as where statute does not forbid. If difficulty is experienced by employees in cashing pay-roll checks, provisions may be made for having available at the office a fund of sufficient size so that this may be done for them.

The form of Pay-Poll Check is a matter of personal opin-

ion, but probably one of the most satisfactory forms provides somewhere for showing to what account the amount is chargeable. Inasmuch as the pay-rolls themselves may be utilized for the same purpose as duplicate carbon checks, the latter seem unnecessary (see Forms 23 and 24).

DISBURSEMENT RECORDS

When a check is drawn, signed, and countersigned properly, the invoice involved may be stamped as "paid" and be filed as such. From the copy of the check (the Cash Sheet) the voucher number of the invoice is secured for comparison of the amount thereof with that on the check. When found to agree, payment date is marked on the Charge Register, after which a checkmark is placed against the Cash Sheet amount.

If a regular Cash Payments Register or Check Register is used, as general accounting theory provides, considerably more labor is entailed in the entry process than as above suggested (see Forms 25a and 25b).

CASH RECEIPTS

In the ordinary course of business, cash is received from cash sales, collection of accounts receivable, notes receivable matured or discounted, trade acceptances, and sundry miscellaneous sources. In the handling of each of these items, considerable variation is noticed, this depending primarily upon both the size and nature of the particular business involved. Some stores have mostly cash sales with which to contend, whereas others have but few cash sales transactions as compared with those upon a credit basis; some few concerns will have more trade acceptances from which cash is received than anything else.

Although trade acceptances are relatively new, their handling is similar to that accorded notes; it usually is advisable, however, to provide therefor a separate division in

ruling the books in which found, even though it may not be necessary to provide separate records for them (see Form 26).

ACCOUNTS RECEIVABLE

These cannot be turned into cash as they should be unless the collection department is thoroughly alive to the situation. In the first place, the granting of credit must be engineered properly. Next, the giving of allowances and following up the accounts should be based upon some definite procedure. Allowances granted reduce the amount of incoming cash, as do bad accounts; hence, considerable thought should be given to these angles on each case.

CASH RECEIPTS RECORDS

The usual form of Cash Book for the record of receipts carries a columnar arrangement which is familiar to every accountant. Net cash and discount as debits (one column for each) are offset by credits (one column for each class) covering Accounts Receivable, possibly Cash Sales, Notes Receivable Discounted—where notes are numerous—and Sundry Items. Frequently, Sundry Items are taken care of by means of one debit column and one credit column, so that where an Account Receivable and an Account Payable are in the name of the same party and cash is received (net) to settle both, the proper adjustment therefor may be made on the Cash Receipts Record (see Forms 27a and 27b).

This usual form of Cash Book is proper really only where the matter of economy is of secondary import, inasmuch as where economy of effort is essential to complete the day's work each day, a more efficient form should be devised. This latter may embody the idea of separate sheets upon which the receipt entries are written in upon a typewriter. The reverse side of the payment sheet may be utilized for such purpose.

Again, as collections are made, such amounts are entered

upon a so-called Collection Sheet prepared in duplicate. The original goes to the bookkeeper for Ledger-posting purposes, whereas the cashier receives the duplicate for the purpose of distributing the receipts to the various depositories.

If it is impossible to have the cash handled by some one other than one who is engaged in selling, as in a store of small size, the use of a cash register should be studied carefully in its function as a deterrent against thievery. If for no other reason, a failure to ring up a sale at its exact amount soon is detected; also, the total receipts per the machine wheels should check against the cash on hand.

The various forms of autograph systems and registers may be considered with the idea of adopting the one which seems to work best under the particular circumstances. Where money is taken in by collectors, a frequent shift in their routing should be followed so as to uncover dishonesty.

Test Questions

1. Enumerate briefly the functions of a Cash Book.

2. State what you consider the best way of handling upon a set of books the Cash and Bank accounts.

3. Brown has been in business a number of years. The only account book he has kept is a Cash Book. He drew a regular salary and additional amounts as his account permitted, always, however, leaving sufficient cash in bank to meet ordinary current expenses of the business. Explain how Mr. Brown is likely to be deceiving himself as to the prosperity of his business.

4. Outline a method under which the disbursing officer in a large company may be certain that the bills which he pays are correct in every respect.

5. Outline, briefly, a system of accounts which will permit of a thorough check being available over all currency disbursements.

6. Describe what you consider to be the proper manner of recording and vouching petty cash transactions.

7. You have encountered a bookkeeper in a small concern who follows the practice of passing Journal entries through his Cash Book. Indicate the line of argument you would pursue to have him discontinue (or continue) his practice, assuming he has asked your advice hereon.

8. Explain as to an inexperienced bookkeeper what you con-

sider to be the proper way of running a discount column upon the Cash Book.

9. Describe various forms of Cash Books used in any three different kinds of business with which you may be familiar, indicating in what respect the basic principles of their use may be the same or similar, and whether or not you think it may be possible to adopt a standard method of recording cash receipts and disbursements in the case of all corporations having a fairly large volume of business. Give reasons for your answer.

10. A charitable institution receives annual subscriptions and donations and employs a canvasser who has to induce persons to become subscribers and who is also authorized to receive subscriptions and donations. Outline, briefly, for this situation what you consider to be the best system of bookkeeping.

Problems

(*a*) Draft a form of Check Register to be used in connection with a voucher system. Three bank accounts are carried. Purchase discounts are to be handled upon the Voucher Register. Append to this form a set of instructions for its proper operation.

(*b*) Draft a form of Cash Book in which are provided controlling accounts with customers and creditors, and columns for discounts, both receivable and payable.

(*c*) Prepare a set of instructions covering the operation of a six-column Cash Book which thus far has been used incorrectly by a trading company.

(*d*) Prepare a report covering a cash accounting system which, in connection with disbursements through the medium of the Voucher Check, will maintain the Cash account balance always in agreement with the bank balance if operated properly.

(*e*) A certain factory employing 1,000 men pays off twice a month. The men are known by numbers. There is a paymaster's department which has under its control a revolving fund of $500 out of which pay advances are disbursed. A Pay-Roll Check is drawn for the gross amount of each Pay-Roll by the Treasurer, and deposited in this special fund from which the employees in the factory are paid off in currency. Employees frequently draw advances on pay, and have the privilege of purchasing materials from stores for personal use, the cost thereof being offset against earnings. Draft a pay-roll form applicable to the above situation and submit entries showing:

Entry of pay-roll on books;
Entry of both types of advances on books;

Entry covering securement of pay-roll cash;

Entry covering return of excess cash on hand beyond $500 to general fund so as to restore the revolving fund to its normal amount as of the beginning of each new period. (The amount to be returned to general fund should be equal to the advances made from stores during each period just closed.)

VI

COST ACCOUNTS: MANUFACTURING

Cost accounting. Cost elements. Merchandising versus manufacturing activities. Factory classes of goods. Organization scheme. Function of manufacturing. Material. Labor. Overhead. Completed orders. Process method.

SINCE cost accounting is treated properly as part of the general division of accounting science known as system building or system installation, it is necessary to summarize briefly certain matters related thereto the better to comprehend the work of later chapters and to solve certain problems calling for cost forms. By no means does the discussion exhaust the possibilities. To some persons modern cost accounting is believed to be the most difficult branch of accounting. Whether or not such belief actually is true is immaterial for present purposes, inasmuch as in only one chapter nothing more can be attempted than to touch upon the subject. After the student has advanced in his study to a consideration of Chapter XI, it will be profitable for him to review this chapter prior to taking up the latter one.

Certain terms are defined, the cost elements are set forth, comment is made upon the fundamental internal organization of a manufacturing plant and, in a general way, the methods of arriving at manufacturing costs are explained. Although it is noticed next below that cost accounting is applicable to practically all types of activities—professional, trading, and manufacturing—the major emphasis in this chapter relates to the last division—that of manufacturing. A fair comprehension of this portion of the field should permit one to view with intelligence the application of similar principles to the other portions thereof, so as to approach a particular problem with a feeling of confidence.

COST ACCOUNTING

This contemplates determining through the general bookkeeping system the exact cost of doing business:

1. The exact cost of everything which should be added to a purchased article so as to determine just where the profit begins;
2. The actual cost of each unit of product completed during a certain period of time (as monthly) and the cost of goods in process at the close of such period.

Only where the exact cost of doing business is known, may future policies be planned in an intelligent manner. The usual accounting statements relate to a previous period. Although they may show even the exact total cost therein incurred, such statements do not indicate the current costs of the current period. Since it is in relation to the current period that planning must be done, such statements have but small value toward realizing the profit goal. It is only through the use of a cost system that a business can know currently what it actually is doing.

The usual belief is that cost accounting concerns only the

No _____

THE FOLLOWING ARTICLES SHOULD BE PROCESSED AT ONCE FOR

DATE _____ 19 ____

FACTORY ORDER NUMBER _____
OR
STORES _____

STOREKEEPER

FACTORY ORDER NUMBER ASSIGNED _____

DATE _____

QUANTITY	UNIT	SIZE	DESCRIPTION	STOCK MAXIMUM	STOCK MINIMUM

Form 28: Manufacturing Requisition.

manufacturer; that is not at all the case. A factory has cost problems galore, but every person engaged in an activity looking toward a profit goal also has many problems of a similar nature. The strength and weakness of a business classified under any group of activity can be pointed out clearly only through the information disclosed by a good cost system. Although some concerns may exist in which it is not feasible to operate a cost system, these instances are rare. Hence, it may be assumed that practically every business at least can have a simple cost system which will function to advantage, if sufficient thought is given to it.

A cost system actually should fit the business for which it is designed; since no two concerns are alike, no two cost systems should be exactly similar. The mere fact that two factories are producing automobiles or pianos is no reason for assuming that their systems should be identical; there may actually be more difference between two such factories than between two entirely dissimilar establishments.

COST ELEMENTS

Regardless of the type of business, the fundamental separation of its cost elements is into two or three general classes:

1. Materials
2. Labor
3. Expense

In factories, all three classes are present, although one or more may be small and the remainder large. In merchandising, probably the material element is the greatest in size. In an accountant's office there will be no material, since only labor and expense are present.

Raw material and productive labor comprise what is known as "prime cost." Indirect labor and other expenses relate to indirect charges. Each of these is discussed briefly on the following pages, keeping in mind the present point of view.

MERCHANDISING VERSUS MANUFACTURING ACTIVITIES

A trading concern purchases goods in a finished condition and sells them. A manufacturing business buys raw materials, semiraw materials, parts, and so forth, and in a factory presumably properly equipped, using the services of workers both skilled and unskilled, it converts these materials into finished goods for purposes of sale. Fundamentally, the chief difference between these two kinds of business relates to the method under which salable goods are acquired.

In order to place a product upon the market, it may be necessary to produce first several of the parts entering into the completed article. In fabricating an automobile, many parts first must be manufactured. This having been done, these parts, with others, are assembled into a finished machine. The underlying problem in the bookkeeping end of a factory, which is not found in a trading enterprise, is to arrive at the accurate production cost of each product manufactured. In order to do this, it is necessary to determine

P.M.	SAT.	FRI.	THU.	WED.	TUE.	MON.	OUT	NOON	IN	SAT.
MON.	NAME _____									FRI.
TUE.	ADDRESS _____									THU.
WED.	POSITION _____ NO. _____ DEPT. _____									WED.
THU.	LUNCH HOUR _____ WEEKLY SALARY _____									TUE.
FRI.	TIME FOR WEEK FROM _____ TO _____									MON.
SAT.	RECEIVED PAYMENT IN FULL FOR SERVICES TO DATE AS ABOVE INDICATED									A.M.

Form 29a: Time Report. Punched by hand four times daily. Style of punch hole shows tardiness.

No. _____

NAME _____

DAY	A.M.		P.M.		O.T.	
	IN	OUT	IN	OUT	IN	OUT
MON.						
TUE.						
WED.						
THURS.						
FRI.						
SAT.						
SUN.						

FRONT

Form 29b: Time Report.

the production cost of each part manufactured so that when the complete product is assembled, the cost of the latter may be known. Regardless of what may be the various forms and records, if their use permits of determining accurately this production cost without too much expenditure of effort, it would seem that the system is satisfactory.

In a manufacturing business, numerous Ledger accounts are required which are not used in a mercantile concern. The possible variation could be illustrated at this point, but a better assembly of material results by deferring such illustrations until the chapters on account classification are reached (Chapters X-XI, *post*).

ORDER NO._____ DATE _____

DEPARTMENT _____ CLOCK NO. _____

NAME	OPERATION	TIME	RATE	COST	

Form 30a: Labor Report (Day Work).

In order to operate a cost system satisfactorily, it is necessary to maintain a perpetual inventory; otherwise, monthly statements cannot be prepared, it not being practicable to take a physical inventory monthly. Again, the proper operation of a cost system requires that the bookkeeping department should know the quantity and the cost of all raw material used, the cost of the productive labor spent on each job in process, and the quantity of each product finished (monthly at least).

Two general methods exist for arriving at the actual cost of finished product:

1. Specific (production) order method
2. Process method

It is possible that for a particular plant, one of these is more desirable than the other, perhaps the only one that should be used. Under another situation, it may be feasible to utilize one method in certain departments and the second in others. Again, it is possible that either method could be used with equal success; hereunder, it would seem that preference should be given the specific order method. Each of these two ways of determining cost of finished product is discussed subsequently, more attention, however, being

WORKMAN'S NAME			CLOCK NO		ORDER NO	
OPERATION (NAME OR NUMBER)				OPERATION FINISHED		
				OPERATION NOT FINISHED		
TIME STARTED	TIME STOPPED	TOTAL TIME	RATE	COST $		
PIECES MADE	PIECES REJECTED	PIECES GOOD	RATE	COST $		
REMARKS				BONUS $		
				TOTAL COST $		
DATE		O. K 'D BY				
				FOREMAN		

Form 30b: Labor Report (Departmental).

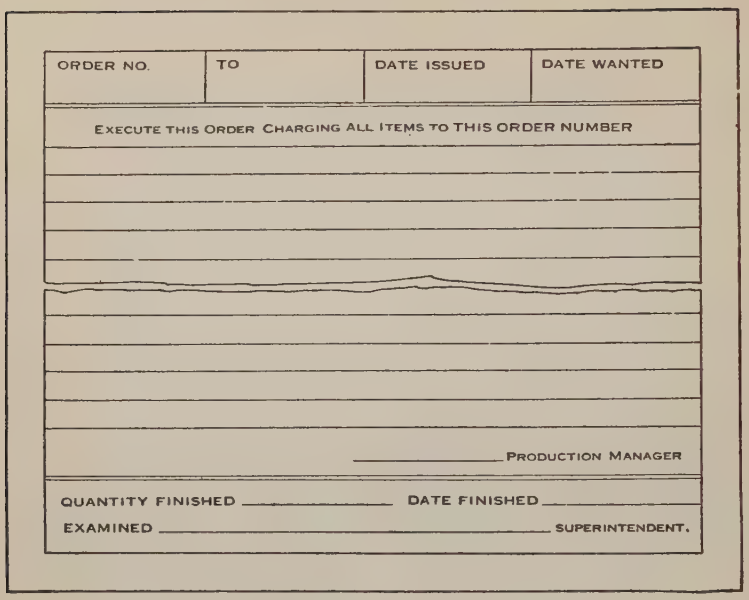
given to the specific order method inasmuch as this is more readily followed than the other—at least doing so by reading a chapter in a book.

FACTORY CLASSES OF GOODS

An article is not a finished product until it is ready for the selling department. The term "finished product" distinguishes that which a manufacturing business produces for sales purposes.

If a unit of product is being manufactured, but has not yet reached a stage of completion permitting of its transfer from the factory, it is said to be in the process of manufacture, and is covered by the term "goods in process." Goods in process may consist of articles which eventually are to be sold as finished product, or they may consist of parts unfinished; when these latter are completed, they should be known as "manufactured parts" rather than as "finished product."

In a factory one may encounter parts purchased and parts manufactured. The first group, to all intents and purposes, may be treated similarly to raw materials, being handled in



Form 31a: Production Order and Cost Sheet (Face).

a similar manner. Parts manufactured should be kept separate so that when finished they may be charged, as monthly, to an account thus titled.

ORGANIZATION SCHEME

In a mercantile concern, the general organization plan may be shown as under:

1. Purchasing
2. Selling and distributing
3. General administration

On the other hand, the functional separation of the operations of a factory may be divided as follows:

1. Manufacturing (production)
2. Selling and distributing
3. General administration

This simple differentiation is sufficient for one to under-

MATERIAL				LABOR				
FILLED BY _____ DATE				NO	OPERATION	TIME	RATE	COST
RECEIVED BY _____				DEPARTMENT _____				
QUANTITY	ARTICLE	RATE	COST					
				DEPARTMENT _____				
	TOTAL							
SUMMARY								
LABOR				DEPARTMENT _____				
MATERIAL								
OVERHEAD								
TOTAL COST				COST PER PIECE _____			TOTAL	

Form 31b: Production Order and Cost Sheet (Reverse).

stand clearly. As relates to a manufacturing company, it is the purpose to explain briefly the operation and organization of the first division only, and in such connection to outline the requisite accounting necessary to secure proper control.

FUNCTION OF MANUFACTURING

Before a factory can commence the manufacture of a product, authority must be secured to do so. This authority assumes the form of an order or orders authorizing the factory to produce a certain product or products. These orders may come originally from one or both of the following sources:

1. *Sales department.* These are special orders.
2. *Merchandise department.* These are orders for regular goods which are sold as a standard product, a sufficient supply of which must be on hand at all times for filling the sales orders received therefor from customers.

When an order is issued, from the sales or merchandise department, upon the basis of which the factory activities

DATE _____ REQUIRED _____ PRODUCTION ORDER NO. _____
NAME _____
ADDRESS _____
CHARGE ACCOUNT OF _____
DESCRIPTION _____
SIGNATURE OF PRODUCTION MGR.

STARTED | PATTERN NO. | COMMENT
FINISHED | DRAWING NO.

MATERIAL			DAY-WORK			PIECE-WORK						OVERHEAD			SUNDRIES			
DAY	REQ. NO.	AMOUNT	DAY	CLK. NO.	AMOUNT	DAY	CLK NO.	OPER. ATION NO	NO PIECES	RATE	AMOUNT	DAY	COM'T	AMOUNT	DAY	DETAIL	L F	AMOUNT
																SUMMARY		
																MATERIAL		
																DAY-WORK		
																PIECE-WORK		
																OVERHEAD		
																SUNDRIES		
																TOTAL		
																DELIVERED		
																DAY	NO UNITS	DAY	NO. UNITS

Form 31c: Production Order and Cost Sheet.

are to commence, it is passed first to the production department (a section of the manufacturing division) for analysis so that the manufacturing entailed may be planned intelligently. This is done, say, by making a comparison with standard or special layout blue-prints. Perhaps it is found that sufficient raw materials are available; if not, the necessary requisitions must go through to the purchasing department authorizing the latter to obtain the materials needed. Eventually, these materials are received, the necessary entries booked for charging the proper factory accounts therewith, and the production activity is ready to go ahead with the work.

MATERIAL

As noted above, the cost of manufacturing an article called for by an order is divisible into three portions—material, labor, and overhead. The production department or

division issues a Bill of Material showing quantities and the description of the materials needed for fabricating that which is called for by the order. The work to be done is assigned an order number; this number is placed upon the Bill of Material, after which the latter proceeds to the raw stores department as authority for the storekeeper to issue to the various operating departments the materials called for therein, these to be charged against the order number assigned that job.

Each department that is to work upon this order draws a "requisition" in duplicate on (raw) stores calling for the issuance of the materials required in the operations to be carried on. One copy of this requisition is returned with the materials, whereas the other is retained by the storekeeper. Periodically, as daily or weekly, the latter forwards the retained requisitions to the cost department where they are priced, extended, and summarized for the purpose of charging the proper job number therewith. These charges are posted upon a job Cost Sheet. The Cost Ledger is nothing but a collection of these Cost Sheets. For every job undertaken, a Cost Sheet is prepared, being filled out with the name of the article to be constructed, or of the lot, and the job number. On these sheets the entire costs of the job are collected as the work progresses. Cost Sheets do not follow the work through the factory, as a rule. The requisitions are filed by job numbers. When a job is completed, its Cost Sheet is totaled.

The materials referred to above are charged directly against jobs, but other materials must be used, these latter being of an expense nature, which cannot be charged to jobs directly; possibly the amount used on a job is too small to make the direct job charge practical. Such material is charged to each department using it, this being done by means of a standing expense order number. In other words, these charges go into department overhead and reach the Cost Sheet in the distribution of that overhead.

In charging out material, it is undoubtedly better to do so

ORDER NUMBER _____ DATE _____

DESCRIPTION _____

NUMBER OF PIECES _____

TOTAL PRODUCTION LABOR COST				
GENERAL EXPENSE BURDEN AT _____% OF ABOVE				
MACHINE RATE AT _____% OF ABOVE				
MATERIAL COST _____				
TOTAL PRODUCTION COST				
SELLING EXPENSE AT _____% OF PRODUCTION COST				
ADMINISTRATION EXPENSE AT _____% OF PRODUCTION COST				
PROFIT AT _____%				
SELLING PRICE FOR THE ORDER				
AVERAGE PRICE FOR EACH ARTICLE				

Form 32: Cost Summary.

upon the basis of specifications rather than otherwise. If it is shown what should go into a job, then it is not a relatively difficult matter to check up on material waste. Certain waste is unavoidable, and the standard specifications should recognize such fact, a percentage of allowance therefor being considered.

Considerable thought may be expended advantageously in providing the requisite records by means of which a separation of materials and supplies is secured, if for no other reason than to do so frequently is the means of reducing waste in the supplies factor.

The procedures concerned with the handling of material should be most carefully studied so that waste and thievery will remain at a minimum. Sometimes a bonus may be offered for this purpose; again, employees may be charged with actual materials drawn, receiving credit at standard when work is completed. The possible methods are legion, but each situation requires separate treatment; it may not be feasible to employ the same method of stopping waste in a hat factory that could be used to advantage in a boiler shop. Straw and ribbon ought not to be accorded the treatment provided for steel and iron.

LABOR

These charges may be divided into two groups—direct (productive) and indirect (non-productive), this separation being similar to that accorded materials and supplies.

Productive labor is to be charged directly against a job order number. Indirect labor cannot be charged to a job in this manner; hence, it should be allocated to a standing expense order number which in turn is chargeable either to a departmental overhead expense account or to general factory overhead account. This expense, in connection with the other indirect expense items, is distributable against the cost of output on some uniform basis. But effort should be made to have as many of these charges as possible allocated directly to jobs rather than having it necessary to resort to averages for distribution; direct charges always are much to be preferred to those which require apportionment.

The paying of labor has been commented upon previously in sufficient detail; reiteration, therefore, is unnecessary. The task of deciding whether labor should be paid a day-rate, piece-rate, bonus, and so forth, has nothing to do with cost accounting proper; yet where the cost system is properly constructed, the labor item periodically will be scrutinized carefully with the idea of changes looking toward establishing incentives for better effort.

No standard plan for wage payment can be suggested, from a practical point of view, since even in the same factory more than one method may be advantageous. Some incentive to better effort should exist, but what this is to be is a question to be decided separately for each plant. When a certain plan is contemplated, the exact facts as to workability should be available; one should know that, under the circumstances, the plan proposed or in use is right.

Regardless of the basis of wage payment, the charge for direct labor is applied by operations. Under a piece-work plan, the labor charge is fixed by the rate; otherwise, the time consumed must be recorded.

GENERAL EXPENSE SCHEDULE

GENERAL EXPENSES			MACHINE RATE		
			VALUE OF MACHINES		RE-PAIRS
RENT			DEPT 1		
LIGHT			2		
HEAT			3		
POWER			4		
TAXES			5		
INSURANCE			6		
UNPRODUCTIVE LABOR			7		
SUNDRIES			8		
			9		
			10		
TOTAL EXPENSE			TOTAL VALUE OF MACHINES		
TOTAL PRODUCTIVE LABOR			INTEREST ON INVESTMENT AT RATE %		
% OF EXPENSE TO PRODUCTIVE LABOR			TOTAL REPAIRS		
			SUM OF INTEREST AND REPAIRS		
			% OF MACHINE EXPENSE TO PRODUCTIVE LABOR		

Form 33: General Expense Schedule.

The production department plans the operations necessary in the manufacture of goods for orders received. When this has been done, orders are issued to each department interested, setting out the operations necessary, the machines required in carrying on such operations and, as mentioned above, the materials required. The employees working on a job secure Time Tickets before beginning work thereon, so that a record may be made as to starting time, finishing

time, and nature of operations performed. Time should be entered when labor is performed, since if this entry is left until the end of the day, accurate costs do not result, too many errors occurring in the record thereof.

The completed Time Tickets are forwarded to the pay-roll department for checking purposes. Here, the total hours worked is checked against the time-clock cards, rates are entered, extensions are made, and the resulting amounts shown. Next, these Time Tickets are sorted by job numbers or are sent to the cost department where this work, and more, is done thereon. At any rate, the cost department posts the direct-labor charges to the Cost Sheets. When the charges are summarized by jobs, the separation is maintained as between departments so that information is available upon which overhead may be departmentally distributed. Time Tickets are filed eventually by job numbers.

Standard order numbers cover the operations on which the time spent, as related to a job, is so small that it is impractical to make a direct assignment of time thereto. Likewise, standard expense order numbers take up the indirect-labor costs of foremen, janitors, helpers, and so forth.

Where non-productive employees work at the same thing for a week at a time, only one Time Ticket is necessary for such period. Each of these is subject to the same handling in the pay-roll department as are the other labor tickets—checking against time-clock records, rate inclusion, extensions, and the like. These tickets are summarized departmentally by expense order numbers, and in the cost department are charged to the proper departmental expense accounts. If work is done continuously for one department, no Time Ticket is necessary, as a matter of fact; yet, if work is done in more than one department, such a ticket is essential.

Since one job does not follow another instantly, there is some waiting time between jobs; this must show up somehow in the records if costs are to be accurate. Waiting time

SCHEDULE OF FIXED CAPITAL CHARGES

FROM TO

TYPE	YEARLY AMOUNTS		MONTHLY AMOUNTS	
DEPRECIATION—BUILDINGS				
DEPRECIATION—MACHINERY				
DEPRECIATION—FACTORY EQUIPMENT				
PATENTS—EXPIRATION				
TAXES—LAND AND BUILDINGS				
TAXES—MACHINERY AND EQUIPMENT				
INSURANCE—BUILDINGS				
INSURANCE—MACHINERY AND EQUIPMENT				
INSURANCE—LIABILITY				
TOTALS				

Form 34: Schedule of Fixed Capital Charges.

is part of overhead, not part of the time applied to the new job.

OVERHEAD

The distribution of overhead expense cannot be governed by fixed rules. Hence, great care must be observed to devise a plan for each case that will work in a satisfactory

manner. Inasmuch as most cost systems fall down because the handling of overhead is at fault, it would seem that thought should be given to the idea of having just as many expenses applied directly to product as possible, rather than to fall back on the lazy man's expedient of distributing as many as possible thereto upon an arbitrary basis.

Fundamentally, overhead expenses are of two kinds—fixed and variable; hence, each source should be kept separate so that its effect may be scrutinized. The basic idea underlying the situation is that costs should apply to each sales unit if they are to be at all useful. If this idea is not kept in mind as a cost system is developed, the sales price per product unit cannot be determined intelligently.

It is presumed that fixed expenses or charges do not vary whether the factory is running full time or is shut down—as rent, insurance, taxes, depreciation, and so forth. Briefly, standard monthly Journal entries spread these expenses to departmental expense accounts, the diffusion thereof being variously determined; for example, rent is distributed upon the basis of floor space.

The second class of expense varies in accord with the activity of the factory; hence, a relationship exists between these expenses and production, so that the forms prepared for their assembly and distribution should be so constructed as to permit of an intelligent, constant study of the detail thereof.

Another way of viewing overhead expenses is grounded upon considering them as separable into three divisions:

1. Fixed charges
2. Contributory departmental charges. This group consists of such expenses as office expenses, general superintendence, executive salaries, heat, light, power, and receiving-, stock-, and shipping-room expenses.
3. Productive department charges, as indirect departmental labor, supplies, trucking, departmental supervision, and so forth.

Nevertheless, regardless of how viewed, the distribution

and allocation must proceed in a fairly uniform manner.

The fixed charges are paid in large amounts—taxes once a year, interest semiannually; even depreciation is put on an annual basis. For the purpose of distributing fixed charges, the factory is divided into departments so-called—a whole floor, part of a floor, or a group of machines of like values being a department; such a divisional arrangement may have something or nothing in common with physical layout.

A schedule of fixed charges or distribution sheet of some type (at times called even a Cost Sheet) is prepared to collect and distribute these fixed charges. The departments —productive and contributory or service—are listed at the left, and the charges are collected across the sheet horizontally. The total of each element distributed to departments eventually is recast into percentages, each percentage showing departmentally the share each department bears to the fixed charges.

The expenses in the contributory and production departments are collected upon sheets somewhat similar to the above. And in doing this, thought should be given to the spread of facts thereon so that the attention may be drawn to possibilities looking toward economies. A separate sheet should be used for each department.

When preparing a departmental expense analysis sheet, the controllable expense items should be displayed first; these are expenses dependent upon the amount of business done. Next, to the total of these may be added those which are considered as uncontrollable—fixed charges, administrative charges, and so forth. After service department expenses have been assembled for each such department—as power department, tool department, and so forth, it is necessary to redistribute, say, to departmental service orders, representing departmental overhead pool accounts. Next, having closed out expenses of departments not directly productive into the productive department expense pools, the point is reached at which distribution to product may be

attempted. The final total cost in a productive department divided by units of product produced, by hours, or upon some other basis believed to be satisfactory, results in securing the distributable unit covering this type of expense.

It is in connection with the distribution of overhead to product that the major difficulty lies. Up to this point, the work is fairly simple and, fundamentally, the general procedure is applicable to all types of activity—to practically all cost systems that are worthy of consideration. But in allocating overhead to product, one runs into all types of peculiarities and business idiosyncracies; here each concern stands by itself inasmuch as the distribution method must fit the peculiar circumstances of each case.

Overhead may be distributed to product cost in a number of ways, the simplest method being that of basing such distribution on productive labor, but the right one for a particular case depending upon circumstances. The productive labor method, for example, provides certain rates applicable to the direct-labor charges of a department sufficient to absorb the expense of the department.

The two methods of applying these loading rates are:

1. Establish the rate at the end of each month of such size that the total expense of each department will be cleared through its use.
2. Establish a fixed (standard) rate for each department which is changed only at the end of each fiscal period.

The first method delays the accounting procedures until the monthly expenses of a department are known. The second is generally assumed as being the better one, although for each month there will exist an under- or overabsorbed burden account balance.

Such a standard rate is determined upon the basis of normal capacity for each department for a fiscal year, this normal being somewhere, say, from 75% to 90% of the capacity of each department. The expenses for a normal department output are estimated, the productive labor for the same output is determined, and the ratio of the former

to the latter represents the standard overhead rate for that department.

COMPLETED ORDERS

The Cost Sheet for a job order, when completed, must contain the following:

1. Material used, as posted from summaries of requisitions;
2. Productive labor, entered departmentally, from summaries;
3. Overhead, applied by the use of loading rates of each department against the productive labor of each department.

These total charges are totaled, the complete job cost secured, and the unit cost then compiled as desired.

When the manufacture of certain products is completed, these are turned over to some department—finished product or stock or merchandise—the account with work in process being credited and this departmental account charged. In case a partial delivery of product is made before the entire order is completed, and costed, the cost on this transfer must be estimated in order that the department to be charged will receive some debit amount. A notation is made on the Cost Sheet to cover this situation, so that upon completion of the job in question the correct adjustment may be made between actual cost and the costs thus far partially charged to the merchandise (or other named) department. This adjustment frequently may be made directly to cost of sales.

PROCESS METHOD

When conditions render the specific order method inapplicable, the process method of cost accounting should be used—as where the lots of material follow each other in such a way that the workmen cannot distinguish one lot from another. Each process is known by a name or number as may be desired.

Standing shop orders are maintained and handled as under the specific order method. The time devoted to each process during the month must be reported, as daily or week-

ly. Likewise, the productive labor periodically is separable as between processes and shop orders. Then if daily reports are furnished by each department on the amount of work completed, it is possible by monthly summaries to calculate the unit cost thereof as concerns the labor element. The labor expended on uncompleted articles in different stages of partial completion is part of goods in process to be carried forward for use in figuring costs the ensuing month. Where more than one product is produced, separate series of processes for each one are required.

Materials are requisitioned as usual, the requisitions indicating for what processes they have been drawn. To determine the materials applied to product completed each month, one adds, to the amount in process at the first of the month, the amounts used during the month and then subtracts the in-process inventory at the end, the remainder representing materials applicable to the current month's production. For each product the cost must be determined separately.

Each month's manufacturing expenses must be distributed between the goods in process and the finished product.

At the end of each fiscal period, the production costs should be determined for the entire time. Also, effort should be made to clean up all in-process work at such moment so that the new period may be started with a clean slate. In this way, comparative costs are secured readily, both by fiscal periods and by months within each such period. Monthly costs should be compared with those of each fiscal period thereto related.

Test Questions

1. Wherein do manufacturing or cost accounts differ from commercial or selling costs?

2. What information would be required by a manufacturer in order to determine the price at which he can afford to sell an article?

3. In designing a cost system for a manufacturing business, what fundamental principles is it necessary to maintain?

4. What books and records are essential to the use of the double-entry system in a manufacturing business? Give a list and description of them. In what ways will these books and records differ from those maintained by a trading concern?

5. Name and describe briefly some of the general methods by which costs are applied in a factory.

6. How is the position of the auditor affected if the system of the concern under an audit is defective as to cost methods?

7. Describe a method of maintaining a check upon the materials of a manufacturing plant and of insuring the proper charging out to jobs of the materials used on them.

8. Outline briefly the principles of cost accounting with reference to reporting and analysis of labor.

9. Outline briefly the principles of cost accounting with reference to the distribution of overhead expense.

10. The physical inventory of the finished product of a factory is found to be considerably less than the balance shown by the book inventory. Having ascertained the cause of this difference, what suggestions do you offer which will prevent a recurrence of such a difference?

Problems

(*a*) Indicate by diagram and schedule of *pro forma* entries the general scheme of articulation of General Ledger, Factory Ledger, Stores Ledger, Plant Ledger, Expense Ledger, Repairs Ledger, and Construction Ledger.

(*b*) Design a combined Production Order and Production Order Cost Sheet for any business with which you are familiar. Design for the same business (or for another) a Production Order and a Production Order Cost Sheet, which are separate forms.

(*c*) Submit, in the form of a report, the practicability, or otherwise, of installing a uniform cost system in a furniture-manufacturing (or other) business. Indicate in this report just how far such manufacturing concerns could go profitably in attempting uniformity of system procedures.

(*d*) Given a plant employing 25 yard laborers at $2.50 per day; 70 mechanics at $5 to $6.50 a day; 40 helpers in machine-shop at $3 per day; 30 molders at $5.50 to $8 per day; 10 helpers and 20 laborers in foundry at $3 and $2.50 per day; 25 patternmakers at $6 to $8 per day; 10 helpers in pattern shop at $3 per day; 20 foremen and underbosses, in all three departments.

Devise for this plant a timekeeping system which will cover fully these various classes of labor; in this connection, also, sub-

mit your reasons in full for the action you take. Submit your conclusions in the form of a report.

(*e*) Design a form for recording the distribution of the various items of estimated factory burden over three operating departments. Indicate the basis of distribution used for each item, and explain and illustrate three methods of charging this departmental burden to the work which passes through each department.

VII

INTERNAL CHECK FACTORS

Organization and transactions. Transactions related to purchases and purchase returns. Transactions related to sales and sales returns. Transactions related to cash disbursements. Transactions related to pay-rolls. Transactions related to cash receipts. Internal transactions.

OFFHAND, one might assume that the principles of auditing are to be reviewed in this chapter. Although a systematizer should have more than a fair knowledge of auditing fundamentals, it is not proposed to attempt a review thereof in a book of this character. The best that can be attempted is to point out in a general way some of the places at which considerable care must be observed with the idea of eliminating or reducing to negligible proportions the possibilities of fraud. Just how this shall be accomplished in each case depends entirely upon circumstances.

The full application of the principles of internal check is impossible under every situation, since such matters as personnel, local conditions, and so forth, may favor strongly the contrary. But by knowing the usual places at which guards should be placed, it ought not to be a difficult matter to develop ways by means of which system procedures may be formulated so as to curtail markedly the possibilities for fraud and defalcation.

The basic idea is to arrange the detail procedures of a system in such a manner that an internal audit or check of the books is carried out continually by the staff employees—the work of one department or person acting as a check upon the accuracy of the work done in another department or by another person. Wherever possible, contemplated procedures should be fairly automatic in their application, deliberate thought not being a requisite to any marked degree.

ORGANIZATION AND TRANSACTIONS

In order to secure at different points the desired results as to internal check, it is essential that each department be connected closely with certain of the business transactions. An organization of some kind must be in existence in order to consummate business transactions, regardless of what may be the particular type assumed by a business enterprise. Since organization is built upon personnel, it is personnel which counts most in attaining commercial success. In some manner, each employee is related to the general scheme of organization, and, in turn, this organization plan is related closely through the members of the personnel to the transactions; completed transactions have a direct effect upon the profit outcome.

The relationship existing between persons and the organization is the first point of contact looking toward the development of a satisfactory system of internal check. In tangible form, this seems to be reflected by the organization chart, a subject which is so important as to require a separate chapter. The second point of contact arises through the intimate connection between the organization and transactions, this being mirrored tangibly in the classification or chart of accounts. Comment upon account classification also is so important as to demand treatment in a separate chapter —two of them, in fact. Therefore, it would seem that there is an intimate connection, each one with the others, of the next five chapters of which this is the first.

The transactions of a business may be grouped in various ways, yet for present purposes the following divisions or classes are satisfactory, these coinciding closely with the separation of the general theory advanced above:

1. Purchases and purchase returns
2. Sales and sales returns
3. Cash disbursements and the cancelation of contemplated cash payments
4. Cash receipts and the return of receipts to senders
5. Internal transfers authorized and revoked

A satisfactory solution to a fairly complete system problem requires that the latter must be broken up along the lines suggested, but without at the same time forgetting in the slightest detail the relationship of all of the parts to the whole.

TRANSACTIONS RELATED TO PURCHASES AND PURCHASE RETURNS

The purchase function fundamentally includes buying, receiving, and authorizing payment of purchases of material, labor, services, and sundry items; the transactions related to purchase returns must be included, also. Whatever may be the purchase routine, as to incoming goods, labor, services, and so forth, the various procedures must tie into the factors of buying, receiving, and approving for payment in a manner which is satisfactory to the particular situation. The making and booking of a particular purchase are not of present interest, inasmuch as these matters were commented upon in an earlier chapter; at this time it is desired merely to indicate some points to which the attention should be drawn, looking toward the establishment, by means of the application of the principles of internal check, of the requisite safeguards related to the purchase function.

Possibilities for fraud in buying materials are many and varied, the following being illustrative:

1. Adversely influencing the purchasing agent;
2. Bribing employees in the purchasing department;
3. Materials received may not reach the storeroom;
4. Materials received may be of inferior quality;
5. Invoices received may not be paid properly;
6. The detailed account credits may be manipulated fraudulently.

It is in connection with possibilities like the above that the systematizer should develop protective schemes whereby the business will not suffer to an appreciable extent, should one or more be attempted.

If the Request to Purchase originates in some section other than the purchasing department, the possibility of having the purchasing agent influenced against his best judgment by a bribe or by a commission may not be disastrous should it occur; every Purchase Order should be supported by a signed request coming from another department so that the purchasing agent will be prevented from doing almost as he pleases. This outside agency frequently is the storekeeper, as where he issues such a Request to Purchase when the minimum has been reached as to certain materials; again, if the purchase is out of due course, the original request may come from some general executive.

Competitive bids will do much to secure an adequate check against the possibility of having the purchasing department employees accept a price without regard to whether or not it is justified by the circumstances; buying without having bids submitted first, should be curtailed to a minimum. Further, no one person should be permitted to select a vendor and place an order. One employee, if possible, should send out the requests for bids, another should receive the replies and tabulate them, and a third should place the order. Again, it is frequently found that a list of bids must accompany each voucher before the latter will be approved for payment. These suggestions, however, should not be taken as meaning that the lowest bid is the one always to be accepted, since frequently other factors are more important than price.

Also, in furthering the scheme of protection by means of internal check, employees may be rotated infrequently between the various positions available, this applying with equal force to many of the positions other than those concerned with purchases. However, in this scheme there is a happy medium to observe; one should not become so enthusiastic over the rotation idea that its application will impair operation efficiency.

Material received may not reach the storekeeper if the

system at the receiving and storing points is defective. Only after the actual incomings have been checked to the Receiving Report should materials pass to the storeroom. Again, employee rotation may be found effective inasmuch as those in the receiving room in the course of time may become decidedly friendly with the persons attached to the storeroom, the two groups usually working in close proximity to each other.

Collusion between the receiving department and the purchasing department is a possibility to foresee, this arising through an attempt to have inferior material accepted. A close inspection of all materials received by some one from the production department is advisable, and during the manufacturing processes frequent inspection of product should take place not only to detect inferior workmanship, but defective material as well.

When the invoice sent in by the vendor eventually reaches the accounting department, or wherever it is that the invoice checking is done, it is an excellent idea to provide for having it checked by one person, rechecked by another, and finally gone over by the one who is to authorize its payment. The paying of these invoices should not be in the hands of the person who authorizes payment.

In booking the accounts or vouchers payable, the accountant should not forget the matter of adequate control. The keeper of the Accounts Payable Ledger, for example, should be prohibited access to the General Ledger so that he cannot force his abstract or Trial Balance at will.

The purchase of services and labor cannot be received and vouched as material to insure protection against fraud therein. In some cases certain services may be covered by the issuance of Purchase Orders, but in others this cannot be done. Hence, in general, the internal check thereover will not be as satisfactory as may be desired. Except for the labor element, which has been commented upon previously to some extent, probably the only satisfactory protection will be that secured through deliberate audit proce-

dures applied after payment rather than before. Whenever possible, tangible evidence of expenditure should be attached to vouchers issued for payment thereof.

The safeguards installed relative to returned purchases must have a fundamental resemblance to those set up for sales, inasmuch as many factors involved are strikingly similar. When material is returned to the vendor, the possibility exists of having this material misappropriated, unless the matter rests with some one other than those connected with the receiving and storing functions. These departments should not be permitted to handle returns except upon definite instructions which have been issued from elsewhere; and as many departments as possible should be brought into the scheme of protection.

TRANSACTIONS RELATED TO SALES AND SALES RETURNS

The points concerned with sales relate roughly to such matters as prices, discounts, outgoing bills, freight on outgoing goods, booking of sales and customers' charges, selling expenses; and as to sales returns, brief comment is offered only in connection with credit memoranda and the inward control over returns.

Even where standard sales prices and discounts are in force, the possibility exists that occasionally an unauthorized change herein may occur, by virtue of which some one will benefit surreptitiously, unless the two activities of preparing billings and making sales are separated. If the billings are prepared by some one other than a person concerned with sales responsibility, unauthorized changes should be uncovered quickly, inasmuch as even a fairly efficient billing clerk will notice discrepancies between the usual prices and discounts and those passing directly under his attention. Being held accountable for errors in the billings, it is fairly safe to assume that such discrepancies will be reported by him, unless it should happen that collusion occurs between some sales department representative and this clerk.

Where sales relate to job work, it is possible to formulate some means whereby the prepared estimates may be used as a check against the actual charges made, provided that such estimates have been prepared otherwise than in the sales department.

Errors are of frequent occurrence in the actual preparation of outgoing bills unless provision is made for a proper checking thereof prior to issuance. The components of a shipment often may be wrong unless quantities, items, vendee, and prices are checked closely, this work being done, say, by two persons acting separately without regard to the result obtained by either of them. Wrong prices and wrong units may be caught before it is too late by making provision for a double checking against sales orders.

Then there is the possibility of confusing a shipment upon which the freight is to be prepaid, considering it as one upon which a prepayment is not in order—or vice versa. A double check of some kind should be developed to avoid an error of this type; perhaps the functioning of a traffic department will be sufficient for this purpose, where such a department exists.

When an invoice has been sent out, the sale transaction is ready to flow to the books as an account receivable. At this point, adequate control should be established over the subsidiary Customers' Ledgers. One important problem at this point concerns making certain that all charges reach the Ledgers—lost invoices and carelessness are responsible for the happening of such a thing.

The control of selling expenses often causes considerable trouble. Salaries and commissions do not offer much serious chance for fund misappropriation, whereas the items of advertising and sundry expenses may cause the accountant some worry before anything like adequate control is developed. The sales manager may be required to authorize expenses of a sundry nature, and it may be possible that bribery in placing advertisements will be curtailed through advocating the use of only well-known mediums.

The issuance of unauthorized credit memoranda is a fruitful source of trouble at times, and yet if the duties of keeping the Customers' Ledger is divorced entirely from those of the cashier, this difficulty, at best, ought to be of small consequence. The issuance of all credit memoranda should be authorized in the sales department, and what is done therewith subsequently should follow closely the handling accorded a purchase invoice.

Articles which have been returned are apt never to reach the warehouse or the factory unless some scheme is formulated under which a return cannot be lost or disappear, without quick detection, until it has been checked in definitely so that some one may be held strictly accountable for the value involved.

TRANSACTIONS RELATED TO CASH DISBURSEMENTS

Hereunder, particular reference is made to disbursements from petty cash, disbursements by check, transactions related to freight, and canceled cash payments.

Payments from petty cash are protected best through the proper use of the imprest system. Prior to each replenishment of the fund, all petty cash vouchers should be approved by some official who will not be lax in carrying out this duty which so often is looked upon as being trivial. If the petty cashier notices that the person who approves his vouchers is slipshod in carrying out this act, he is most apt to devise some means whereby portions of the fund will find their way into his pocket. Vouchers presented for approval should be so marked and defaced that they cannot be utilized in a fraudulent purpose; if they are filed away after approval, this should not be at the hands of the petty cashier, and the repository should not be accessible to him.

Check disbursements are protected easier than payments from petty cash. This point has been commented upon in a fairly detailed manner in a previous chapter. The cashier should have nothing to do with preparing and approving

vouchers for payment; he should sign no checks; checks should carry more than one signature; and the signing of checks should not be treated in a perfunctory manner by those whose duty it is to sign them.

If a check is to be issued in payment of something which is not covered by an invoice, some major official should approve the voucher which is prepared for such purpose.

Incoming freight charges should relate to goods actually received. Hence, freight bills should be matched against goods received, say, in the receiving department, and the Receiving Report numbers should be attached to these bills before they are passed along. The internal check should make it impossible to pay a bill twice.

Outfreight charges should be matched against the bills of lading, and protection should be afforded against a double payment.

When the cancelation of a cash payment is necessary, the routine should prevent an eventual double payment.

TRANSACTIONS RELATED TO PAY-ROLLS

Although the subject of pay-rolls has been developed previously, a brief comment at this time may not be amiss. The essential factor here seems to be to have the timekeeping entirely separate from the paying of the men. And then the internal check features should guard against the occurrence of such matters as:

Padding;
Withholding unclaimed pay;
Failure to drop from the rolls employees no longer in the place;
Placing employees on the rolls before they have been actually hired and put to work;
Falsification of earnings;
Falsification of pay-roll footings;
Withholding amounts refunded for overpayment;
Falsifying amounts paid out for underpayment.

The system procedures should not permit a person to pay off the men if that person has any control over the amount of

money to be drawn from the bank; and the person whose duty it is to pay off should have no connection with preparing the pay-roll. Pay-roll checks never should be for round amounts. Time clocks should be utilized to record *in* and *out* time, and this record should be checked against the Labor Tickets prepared for the work actually done each day; otherwise, one employee easily may punch the clock for another who has taken an unauthorized holiday without the discovery occurring automatically. If automatic clocks are used with which to stamp the starting and stopping time of jobs on the Labor Tickets, dummy tickets cannot be passed in for an absent employee without such a fact being discovered.

The ordinary precautions provided through the installation of an efficient pay-roll system will prevent padding and will detect the carrying of an employee on the rolls after he has been dropped, provided the duties of timekeeping and paying off are separated clearly. Careful checking of clock cards, labor slips, and employment records, as a matter of routine, should prevent collusion between employee and timekeeper that would cause monetary loss to the company.

Falsifying the pay-roll footings is not going to cause a loss if the paymaster has nothing to do with preparing the pay-roll—at least, the paymaster cannot benefit by such an act.

The pay-roll problem is a serious one, worthy of considerable thought in each case, to the end that procedures may be developed which will reduce peculation possibilities to a minimum. Back in Chapter V, the pay-roll was discussed to some extent, and in connection with the present topic, this chapter should be reviewed.

TRANSACTIONS RELATED TO CASH RECEIPTS

Cash is received primarily from cash and charge sales; infrequently, a return of a receipt is necessary. The methods by which a cashier may abstract cash are many, some

being rather difficult to detect unless the internal check is adequate, and others showing up either almost automatically after a time, or at least as a result of a specific audit. Some require no collusion by the cashier with another person, even though the receiving function is divorced from that relating to entry, and others cannot be carried out to any serious extent without help. Fundamentally, in order to make the misappropriation of cash difficult, incoming moneys should never be handled by any one who has access to the Customers' Ledger.

The actual stealing of cash without record falsification is discovered readily when the bank statement is received and reconciled against the books. Withholding receipts without entry may go undetected for a time where the cashier can change or suppress monthly statements to customers, but eventually their complaints should cause discovery. Delaying the entry of cash received (lapping) may be stopped by depositing all receipts intact each day, and by requiring duplicate deposit slips to be made out, the bank-stamped duplicate going to some official direct so as not to reach the cashier's hands. Checks for accommodation should never be cashed from undeposited moneys.

The Cash Book may be written up in detail correctly, yet the totals may be false—as reduced for General Ledger posting—if collusion exists between the cashier and the entry clerk, so that the abstract of the Customer's Ledger will agree with the control. This may also occur where the functions of cashier and Ledger keeper are combined in one person. The overstatement of customers' discounts on the Cash Book may be deliberate in an attempt by the cashier to appropriate personally the difference between actual and reported discount amounts. Where this practice is confined to currency receipts, detection may be difficult; but if it is applied to other receipts, detection should be possible by means similar to those used to uncover lapping, unless there exists an understanding between the cashier and the Customers' Ledger clerk; otherwise, the latter is apt to draw the

attention of some one quickly to the discrepancy between the discount rate in use and that shown by the cashier. Accounts of delinquent customers should be cared for properly, so that an arbitrary charge-off is impossible; in fact, all Journal entries should be approved officially—that is, those placed upon the General Journal. Other possibilities for fraud might be mentioned, but the above seem sufficient for illustration, and for emphasizing the fact that the cash receipts phase of a case should be carefully studied in view of what it involves.

Duplicate Sales Tickets should be prepared for all cash sales, so that the customer may receive the original and pay the cashier therefrom, the duplicate being retained by the sales clerk, and being sent later directly to the person who is responsible for its audit. All blank books not in use should be safeguarded carefully.

Where cash receipts are the main source of revenue, the charge sales being fairly incidental, the proper protection may be difficult to secure. Cash registers in themselves may not afford an accurate check. Short- and long-changing customers, particularly during rush hours, frequently develops a problem that is difficult to solve.

Sundry receipts should be given careful attention, as freight claims, sales of scrap, unclaimed pay, telephone calls, advances on expense accounts, and so forth.

Transactions concerned with the return of cash receipts need not cause much trouble, provided the usual protective cash procedures are utilized, and the keeping of the Customers' Ledger is eliminated from the cashier's sphere of influence.

INTERNAL TRANSACTIONS

These occur only within a business, being reflected by a charge to one internal account and a credit to another—as goods going from process to the finished stock-room, and so forth. In a large concern, internal transactions are practically numberless. Their accurate handling is important

if for no other reason than that it is essential that each department be charged with its proper costs. The records of one department frequently may be utilized as a check against the accuracy of those in another—for example, the Purchase Record has a relationship to the values going under the control of the storekeeper, and the Summary of Materials Issued and Returned to Stores has a direct connection with departmental charges covering such items.

Efficient methods for handling supplies, scrap, and spoilage should be formulated particularly with reference to having available the facts for checking excessive consumption and unwarranted quantities.

Test Questions

1. Explain what is meant by the term "internal check."

2. Enumerate as many matters as you can which you deem of special importance in devising any system of internal check related to the office records.

3. Enumerate as many methods as you can whereby a bookkeeper who acts as cashier may dishonestly abstract funds of a company and still keep his books and accounts in balance.

4. A retail clothier has a branch in a neighboring city in which the entire clerical work and cash transactions are in the hands of one clerk. Suggest briefly a method of bookkeeping which you believe will afford a thoroughly practical check over the branch transactions.

5. In a certain company, officers' salaries are credited to personal accounts carried with them and drawings are charged thereto. In addition to currency drawings on signed and numbered vouchers, officers are all privileged to pay private bills with company checks, and also to purchase company merchandise for personal use. State at least three ways in which these officers, without collusion, might defraud the company. Offer suggestions as to how you would reduce the possibilities for fraud by these means.

Problems

(*a*) Present a report covering the proper control, with a view to expense reduction, over office stationery and other supplies of various kinds, used in the general offices of an establishment whose bill for such items averages $500 a month.

(*b*) A defalcation in a local concern was accomplished by the cashier's appropriating to his own use discounts on customers' accounts, either in excess of the standard rate or by allowing them on accounts that had exceeded the discount date. Outline in the form of a report the suggestions you would offer to guard against such occurences.

(*c*) Outline in report form the books and records you would recommend for the proper handling of cash receipts and disbursements in a large importing and jobbing concern, including also whatever procedures you deem necessary in the premises.

VIII

INSTALLATION PRELIMINARIES

Problem investigation and study. Basic investigation. Design of forms. Form size and shape. Form space arrangement. Paper for records and forms. Variations in paper color. Carbon-paper. Printing forms. Ruling forms. System report.

THIS chapter attempts to summarize briefly certain miscellaneous matters general in character relating to the accountant's investigation and report thereon, as:

1. Illustrative procedure;
2. Paper selection, ruling, and printing;
3. System report.

A sympathetic appreciation of these factors should permit of a more intelligent attitude toward the problems uncovered later than otherwise will result.

PROBLEM INVESTIGATION AND STUDY

The segregation of an accountant's work in designing a system for a specific undertaking into a definite step-by-step procedure, of necessity depends upon the particular individual's ideas, as crystallized both by past experience and by his present study of a given problem. For illustrative purposes, the following divisions or steps probably are satisfactory:

1. The basic investigation;
2. The study of the facts brought out by (1) which apparently have a specific bearing upon the determination of the methods to be employed in securing the results desired;
3. The work of constructing the following, including the instructions for printing, ruling, and binding:

(*a*) Account classification;
(*b*) Ledger records;
(*c*) Journal records;
(*d*) Auxiliary forms;
(*e*) Statements.

4. The construction of the report:
   (*a*) Instructions necessary for conducting the system:
      (1) Functions of particular accounts;
      (2) Standard operation procedure;
      (3) Mechanical procedure, including the accessories that are to be used.
5. Provision for actual installations;
6. Provision for following up the work after the actual installation has been completed.

In some instances, all of the above must be employed; in others, perhaps one or more may be omitted. If a complete system is contemplated, covering every activity of a concern and the results incident thereto, undoubtedly a full spread is necessary. On other occasions, as where a business has been in existence for some time, perhaps only one or two departments will become the subject-matter for the systematizer's constructive effort; if so, it may be requisite only to provide a partial plan, to take care of but that particular division or section of the enterprise. Nevertheless, regardless of circumstances, a definite attack should be planned, looking toward the accomplishment of some specific purpose.

BASIC INVESTIGATION

It is not the intent hereunder to present a list of representative questions or points which might be covered in the investigation of a concern. Any one expecting to engage eventually in work of this type may be assumed as having a sufficient knowledge of auditing procedure as a background, to comprehend the type of questions that the systematizer is apt to ask himself, and for which he seeks the necessary answers; it would seem that the questions propounded by the modern auditor to acquaint himself with the

system he is expected to audit are strikingly similar to those advanced by the system accountant, whose chief duty is the installation of a new system or the revamping of one which has become obsolete. In fact, both kinds of work (auditing and system work) frequently are done by the same person.

In general, the accountant should secure a map or blueprint showing the location of land plots, buildings, and departments within the buildings. By scrutiny of, say, the sales catalog, he should familiarize himself with the commodities handled. Then he ought to determine how these commodities are fabricated, bought, and for what purposes they are purchased by the trade. In this latter connection, undoubtedly the accountant first ought to make a thorough visit of the plant, securing as his guide not an official but some one well acquainted with the plant routine who has sufficient ability to describe intelligently the many matters which may prove of definite interest to the investigator, and concerning which the latter desires detailed information.

Again, the accountant will require a copy of the Ledger accounts, and of the Trial Balance. The functions of each account must be understood thoroughly. Probably, a set of forms now in use will provide much valuable information. Following this, many questions will suggest themselves relative to purchases, receiving, stock-keeping, inventories, sales, credits, accounting, pay-rolls, administration, and so forth. Some of these factors, which have not been touched upon previously are taken up in later chapters.

DESIGN OF FORMS

Forms represent the means to an end—an aid in securing controlled information—provided they are designed and utilized properly. An economical reason should underlie the use of each form—as the saving of time in the recording of information. Headings and columnar arrangement should make it unnecessary for the recorder to determine for himself just what information is wanted concerning a matter and

the exact arrangement in which this information shall be compiled. The recorder, in other words, should be relieved of the necessity of seeking personally a place in which to enter his information, and of wasting time in attempting to decide for himself which one of two or more locations on a sheet represents the best position.

Again, the use of forms should tend to save in labor effort, since by knowing just how a form is used the writing of information thereon eventually should become more or less mechanical; the desired result is that the mentality is not so readily fatigued as otherwise would happen. Further reasons for the use of printed forms are the following:

1. Filing is made easier;
2. Finding is facilitated after filing;
3. Information thereon is made available quickly;
4. Speed in handling operation facts is increased;
5. Accuracy is increased;
6. Time spent in checking data is reduced.

FORM SIZE AND SHAPE

The space set apart by rulings upon a form should be sufficient to permit the record of information therein without having the entries so made present a cramped appearance. In so far as possible, also, standard sizes and shapes should be utilized so that standard equipment may be used therewith; non-standard filing devices, for example, cost considerably more than standard-sized ones since the former must be fabricated to special order. Non-standard sizes and shapes may make it necessary to discard considerable of the existing office equipment. In one case, a daily distribution sheet was made so large that no existing desk would accommodate it; in another, a new loose-leaf register was so wide that the old office safe could not hold it.

FORM SPACE ARRANGEMENT

The arrangement of the information to be placed upon a form may present a problem of considerable difficulty. On

the one hand, it is necessary to consider the individual form; on the other, the assembly of different forms in a uniform container, as a file, should be given careful thought.

Since forms must be sorted, filed, and located quickly, the information permitting this to be done should be allocated near the top of the sheet with the symbol designation preferably in the upper right-hand corner. Again, as where a double filing proves necessary— a major division first and then a minor one under the major—the relative importance of the remaining available form locations should not be overlooked, as corner, upper center, and upper right just below the top space. Further, the matter of providing for more than one extension of amounts may cause trouble.

If a number of forms are to be assembled readily, the data should be so placed that on each, similar data will come to light at the same location. If this is not done, filing speed slows up, and frequently important data will be overlooked or at best secured only by the exercise of considerable effort.

PAPER FOR RECORDS AND FORMS

In designing the multitudinous forms necessary in an accounting system of fair size, one should select with professional care the paper to be used therein, the choice being based upon a knowledge of the purposes to which the available different kinds are adapted. It seems highly desirable for the accountant, as to each form drawn, to specify the kind, quality, and weight of paper to be used therefor.

The principal kinds of paper encountered may be indicated roughly as follows:

1. Ledger—for books
2. Bond—for small forms, bill-heads, and letter-heads
3. Sundry:
   - (*a*) Onion skin
   - (*b*) Book
   - (*c*) Cover stock
   - (*d*) Manila
   - (*e*) Bristol board

Ledger and bond paper are used chiefly in system work. They should be so compounded that creasing will not crack the sheets, that both sides may be ruled clearly and distinctly, and that they will withstand numerous erasures without either blotting or soaking up the ink. Paper for loose-leaf records should be of a heavier grade than that used in bound books of a similar size. At the present time, it is frequently impossible to distinguish between Ledger and bond paper, inasmuch as it seems that quality oftentimes is not the determining factor governing the designation used.

In designing a form, it is highly desirable to produce one that can be cut from a standard-sized sheet with the least amount of waste. Infrequently, the accountant may find a printer so intelligent that he can leave this problem entirely to him; ordinarily, however, this cannot be done with profit. After the quality and weight of the stock from which a form is to be cut has been decided upon, the constructor should indicate specifically the size from which this form may be cut most economically, with a minimum of waste. In this connection, it is potent not to overlook the fact that in trimming and cutting, an allowance of from $\frac{1}{8}$ to $\frac{3}{8}$ of an inch should be provided—the smaller the form the greater the waste.

Representative flat writing-paper sizes are shown in Table 1, on the following page; for the papers most used, the weights per ream are indicated.

Ordinarily, Ledger paper ranges in weight from 16 pounds to the ream of 500 sheets, to 30 pounds, the usual sheet size being 17 by 22 inches. General practice seems to incline toward a 28-pound paper for bound books and a paper of a little heavier grade for loose-leaf books—as 30-pound stock. Ledger paper has a tendency to crack easier than bond paper; hence, in general, it is not as acceptable for letter-heads, bill-heads, and so forth, as the latter kind.

As in the case of Ledger paper, bond-paper size usually is 17 by 22 inches or 14 by 17 inches, but the weight varies from 16 to 20 pounds. The less the weight, the more carbon

TABLE I

REPRESENTATIVE FLAT WRITING-PAPER SIZES

Known as	Size	Weight per Ream (500 sheets)
Flat Letter	10 x 16	
Flat Packet or Packet Post	12 x 19	
Flat Foolscap or Small Cap	13 x 16	
Flat Cap	14 x 17	14, 16, 18, 20
Crown or Crown Cap	15 x 19	20, 22, 24
Double Letter	16 x 20	
Demy	16 x 21	20, 22, 24, 26, 28, 30
Folio Post or Folio	17 x 22	16, 18, 20, 22, 24, 26, 28, 30
Double Folio	22 x 34	32, 40, 48, 56
Double Cap	17 x 28	20, 24, 28, 32 36, 40
Small Double Cap	16 x 26	
Royal, Double Packet or Packet Folio	19 x 24	20, 24, 28, 32, 36, 40, 44
Check Royal	19 x 26	
Double Crown	19 x 30	40, 44, 48
Super Royal	20 x 28	36, 54
Double Demy, narrow	16 x 42	56, 60
Double Demy, broad	21 x 22	48, 56, 60
Elephant	23 x 28	65
Medium	18 x 30	28, 32, 36, 38, 40
Imperial	23 x 31	72
Double Medium, narrow	18 x 46	72, 80
Double Medium, broad	23 x 36	64, 72, 80
Double Royal, broad	24 x 38	56, 88
Double Royal, long	19 x 48	88
Double Elephant	27 x 40	
Double Double Cap	28 x 34	64, 72, 80
Columbier	23 x 34	80
Atlas	26 x 33	
Antiquarian	31 x 53	
Emperior	28 x 72	
Cardboard	22 x 28	
Car-Card Board	22 x 42	

copies of a form may be prepared. Where carbon copies up to five in number are required, it is probably sufficient to use bond paper, but where more carbon copies are necessary, nothing but onion skin should be utilized.

Cover stock weighs anywhere from 22 pounds and upward to the ream of 500 sheets, the sizes numbering about three—20 by 25; 22 by 28; and 23 by 33 inches. Tag

stock (manila) usually is about 120 pounds, although it is to be found from 100 to 200 pounds per ream. Paper to be used for index guides (bristol board) usually comes in packages of 100 sheets, the variation in weight being from 100 pounds up, probably 120-pound stock being the upper limit.

VARIATIONS IN PAPER COLOR

The color of paper stock varies considerably, but the following colors are fairly standard:

Ledger—white, blue, buff;

Bond—the colors hereunder, practically, are limitless inasmuch as oftentimes paper of presumably the same color as another make has an entirely different shade; the common colors are white, blue, buff, tan, green, gray, pink, and canary;

Onion skin—the colors vary considerably, but illustrative hues are similar to those mentioned under (bond) above;

Cover stock—the color variation here is considerable also, the usual selection being from those mentioned under (bond), above;

Bristol board—white, blue, buff, salmon, canary, and so forth.

One should not weigh lightly the solution of the color scheme problem, inasmuch as it may be possible so to arrange colors that the color of a sheet will indicate its basic purpose. Of all the colors available, the accountant should discard, as a rule, consideration of any which are not common; it may prove somewhat difficult to fill a repeat order when the original supply of a certain form is exhausted. Shades which are easy on the eyes under electric light are especially favored, particularly when one is concerned with records which are to be used either continually or frequently.

CARBON-PAPER

Considerable thought may, with profit, be given to this subject when on a case, particularly as to two matters:

1. The possible uses for carbon copies of forms; whenever

occasion permits, provision should be made for a manifolding process—the use of manifold sets of blanks;

2. The weight of the carbon-paper that should be used for making the various copies of forms desired.

If the original copy of a form is to be filled out in pencil, as a Sales Slip, pencil carbon should be used in preparing the duplicate. This carbon is thick and heavy with a soft surface, and is generally usable with cheap grades of paper. Then there is a little better grade of carbon-paper that may be used for making three or four copies, the writing being done either with pen or hard pencil. If a form is to be filled out on a typewriter or other machine, it is necessary to have the surface of the carbon-paper fairly hard, the texture firm, and the writing paper of good quality; the more copies, the lighter in weight should be both the carbon-paper and the form paper. Another point in this connection is that the machine platen should be scrutinized, inasmuch as there is a considerable difference between machines.

For ordinary machine use, the following further suggestions may be of value:

1. Carbon-paper which is listed, say, as seven-pound stock, is sold more on the number of times each sheet can be used than on the number of copies that may be prepared at one writing; it may be considered as the ordinary letter carbon;
2. Carbon-paper which is listed as five-pound stock may be used for the making of as many as seven or eight copies, provided the writing paper is of good quality and fairly light in weight;
3. Carbon-paper which is listed as four-pound stock may be used for the making of, up to twenty copies, provided the writing paper is of the proper texture and weight.

PRINTING FORMS

It is possible to spoil a form which, from the informational point of view, may be excellent, by not giving sufficient thought either to its printing or to its ruling. Although

Return copy with forms

19 X 13

25-66-

1000
Pad 100

STOCK REPORT FINISHED PIPE

BUTT WELD (Hvy Face)

DATE ..... 19....

	1/8 FEET	1/4 FEET	3/8 FEET	1/2 FEET	3/4 FEET	1 FEET	1 1/4 FEET	1 1/2 FEET	2 FEET	2 1/2 FEET	3 FEET			
BLACK IRON STAR														
BLACK IRON MERCHANT														
BLACK STEEL														
BLACK STEEL FULL WT														
GALV IRON														
GALV STEEL														
LINE IRON														
LINE STEEL														
DRIVE														
TUBING														
X HEAVY														
XX HEAVY														

LAP WELD (Hvy Face)

	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8				
BLACK IRON STAR														
BLACK IRON MERCHANT														
BLACK STEEL														
BLACK STEEL FULL WT.														
GALV IRON														
GALV. STEEL														
LINE IRON														
LINE STEEL														
DRIVE														
TUBING														
Y HEAVY														
XX HEAVY														
CASING	3 1/4	3 3/4	4 1/4	4 3/4	5		5 3/8		6 1/4		8 1/4			

N.B. vertical lines red
horizontal lines blue
Double lines + heavy
lines wherever
necessary

Please as soon as proof ready

FCH

certain principles may be absorbed in a theoretical manner, only practice and close observation will enable an accountant to become skilful in indicating properly the size of the type to use in printing a form, and in inserting the rulings to be followed by the printer.

The making of decisions as to these points should not be left to the printer; the latter, as a rule, follows copy blindly. Hence, copy should be so prepared that the printer can have no legitimate comeback; he is protected legally in securing his fee or charge if he follows copy as submitted to him. A well-designed form is pleasing to look at; a poorly constructed one never can boost the designer along the way toward success.

Most forms are original in design—at least they should be—rather than being lifted bodily from some other system for utilization elsewhere. Although the in-charge systematizer is most apt to sketch his forms roughly in pencil, and then turn them over to an assistant to be completed before they are passed along to the printer, it is incumbent that he criticize the finished job—the rulings, the lettering, and the specifications to be followed by the printer.

In order to block out the sheet and column headings intelligently, one should have a knowledge of the printers' point-system, and of the approximate number of words per square inch under each point designation. In the printing trade, a point represents 1/72 of an inch, type bodies being cast in multiples of the standard point running, say, from 4 point upward to 72 point. Ordinarily, type smaller than 6 point is not advisable unless much matter is to be crowded into a limited space, in which event, also, the paper must be of excellent quality. A copy of a catalog of a type foundry is a most valuable book for the system accountant to possess.

All too frequently only scant attention is given to the matter of the kind of type to be used in printing a form. The basic consideration, outside of letter-heads and check blanks, seems to be clearness and simplicity. To this end,

the Gothic style of type face is well adapted. This style is plain, the type face varying from light to heavy. The lines are of the same thickness throughout the letter; variations in the Gothic faces are few.

Further, in order to block out properly the wording at the head of a sheet, or in its body, so as to fill the space allotted thereto, one should be familiar with the approximate number of words per square inch under the point system, both where each line is solid and where leaded; for example:

8 point solid—32
8 point leaded—23
10 point solid—21
10 point leaded—16
6 point solid—47
6 point leaded—34

RULING FORMS

In ruling forms, the designer should endeavor to follow some general color scheme so that a pleasing appearance will result; the color scheme selected should be such that it may be applied to the entire system being developed. It is general practice to use the following differentiations:

Red and blue for white paper;

Brown and green for buff paper and, frequently, for white stock.

The border ruling, say, across the top of a sheet may consist of two, three, or four lines, depending primarily upon the size of the form:

Small form—a double line, of the same color, as red or blue, about 1/16 of an inch apart;

Medium-sized form—a triplicate line, the two outside ones being of the same color, and the center line of a different hue;

Large form—a quadruple line, the two outside being of one color, and the two inside being of another.

Usually, a double-line border will suffice at the bottom, both lines of the same color.

The vertical rulings inside of the borders should be more or less prominent, dependent upon the space separation being planned. A main division rule should be made fairly heavy, the next separation within a main division being less noticeable, and the unit lines in the money columns being but faintly ruled. The horizontal lines in the body of a form should be but faintly ruled, usually in blue, and where the sheet is fairly wide, each such fifth line either should be ruled heavier than the others or should be of a different color. These horizontal lines should be marked off in accord with the point system and, in this connection, a special steel rule showing these gradations should be part of the accountant's equipment. In order that one may visualize to some extent what represents a common spacing situation, the usual typewriter allows six lines to the inch, this being designated as 12/72.

In ruling the vertical unit money columns, the exercise of considerable skill is possible. Generally, the spacing is about ⅛ inch, the variations therefrom being measured in 72ds of an inch. The number of divisions per column depends upon the average size of the amounts to be entered therein in the course of operation. The width of each space should be sufficient to permit of the writing in of a figure easily, particularly so that there will not be a spreading of it over into the next spacing; in purchasing blank books columnar ruled, as some accountants are frequently prone to do, particularly in connection with the smaller systems, one will notice commonly that the unit lines in a column are either too close together or too far apart. On the one hand, the ready reading of an amount or the footing of a column is rendered difficult, whereas, on the other hand, there is a waste of paper space. In the ruling of these vertical unit money columns, each line which represents the separation between hundreds, thousands, and so forth, and the one placed where the decimal point is located, should be ruled heavier than those in between.

In preparing a form for the printer to use as a copy, it

seems desirable to rule all forms in colored ink if the lines are to be set in on a ruling machine in colors; if they are to be printed on the form, black ink may be used to show this fact. Frequently, forms are ruled first upon paper and next traced on tracing cloth in the manner observed in engineering offices.

Punchings and perforations must be indicated with care, say, in black ink or in pencil. Often, forms will be prepared for use with certain standard binders; the choice of binder should be determined before the punchings are indicated. Then, care must be observed to so locate the punchings, and the kind (hole or slot) that the binder selected will hold the sheet prepared for use therewith. The ready availability of a number of binder catalogs for reference is advisable unless special binders are to be made up for the case in hand. Further, in connection with the use of standard binders, one must exercise care to the end that the cover will not be too small or too large for the sheet.

In the ruling of forms, one should have equipment consisting at least of a draughting board, thumb tacks, T square, ruling pens (one for red and one for black ink), and drawing ink. If a job is worth doing at all, it is worth doing well; a good job cannot be done without the right kind of tools at hand.

SYSTEM REPORT

The accountant's report based upon a system investigation is presented, primarily, according to his personal desires and inclinations. Nevertheless, a skeleton structure may be suggested, somewhat standardized in design, upon which the detail may be draped. Briefly, the following outline is suggested:

1. Letter of submittal;
2. Organization chart showing departmental segregation of duties and personal authority—the division between authority and responsibility;

3. System changes contemplated, reasons underlying such changes, and results accruing therefrom;
4. Forms to be used listed and described, and accompanied by a set of standard practice instructions explaining each step followed by each form until filed in the "dead" file;
5. System chart showing tie-up of all forms into a complete fabric;
6. Chart of Ledger accounts so arranged that the periodic statements flow therefrom as a matter of course, being accompanied by a set of instructions explaining the handling of each account, or each account that is peculiar to that particular case in hand;
7. List of mechanical devices to be used.

Questions and Problems

No specific questions and problems are suggested. The instructor may compose a number of them based upon the chapter content. Sufficient problem drill may be secured in connection with problems that are to be solved subsequently.

If samples of paper stock are available, considerable profit should result from an attempt to become acquainted with standard weights and kinds through the senses of sight and touch. Then, again, with the aid of these samples, a laboratory problem or exercise may be developed, under which actual ruled Journal and Ledger forms are to be compared with the samples in an endeavor to match them—form against sample.

IX

CHARTS AND PLANS: LAND, FLOOR, LAYOUT, AND ORGANIZATION

Sources of information. Proprietorship. Organization. Capital. Capital for fixed assets. Capital for current assets. Departmentalization. Charts. Plant layout. Plant trips. Use of land plats. Floor plans. Layout charts. Effort. Organization charts.

THE present point of view considers the constructive accountant primarily a designer of systems to be operated by bookkeepers, including the design of procedures which tend to make such systems function efficiently. But it will be noticed that the accounting systematizer, in his task to discover efficient means for recording the functional activities of a business in harmony with a complete and coordinated plan, must have some specific knowledge of certain phases of engineering and of scientific management.

The order of arrangement followed in presenting some of the major principles which underlie the work of the systematizer is not the only possible one. Upon an actual case, he carries along a number of matters concurrently, but, for purpose of discussion, this method of approach cannot be followed. Further, system men start at varying points when work upon a case is commenced; some will have a definite plan of approach, whereas others apparently do not follow a standard procedure. One person may direct his attention first to the stores angle of the situation, another may construct a tentative chart of accounts in the original instance, another may be interested first in the final statements, and another may make an exhaustive survey of the plant and its departments prior to doing aught else. To the particular individual, each type of approach has its merits, and it is not proposed to comment favorably or adversely one way or the

other in this connection. Some plan must be kept in mind, and the work must be laid out systematically; the experienced accountant is recognized easily by the manner in which he goes about his duties, regardless of the exact order of contact.

Certain organization matters must be understood clearly by the system accountant if he desires ever to undertake the task of reorganizing an entire establishment—even one of fair size. He is severely handicapped if the current layout of a plant, for example, cannot be visualized clearly and, if need be, constructive suggestions cannot be offered for improvement the better to have processes and the records thereover flow smoothly, one into the other. Again, a satisfactory chart of accounts cannot be outlined, at least for a concern of consequence, unless he is able to comprehend the sketching of an organization chart.

It is proposed, therefore, in this chapter to discuss briefly some of the principles of organization believed to be essential for current purposes, and to crystallize into illustrations those dealing with the two basic problems of:

1. Plant layout;
2. Authority and responsibility.

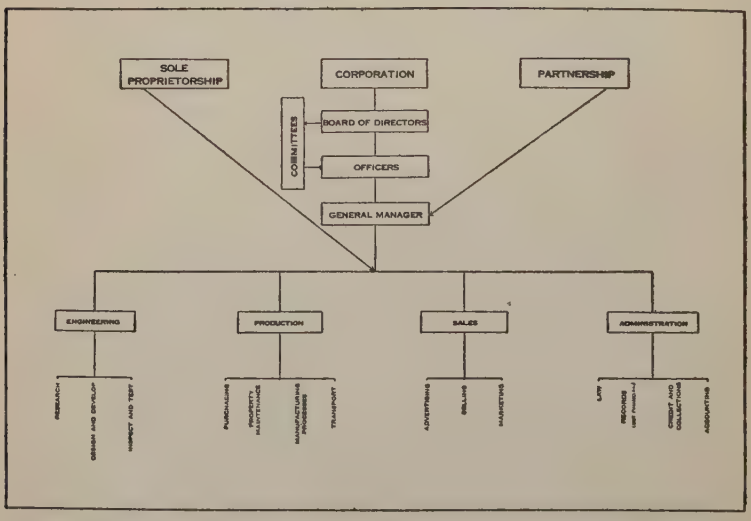
SOURCES OF INFORMATION

However well the systematizer may be informed about the type of concern with which he has just come into contact, various sources of information should be utilized so as to comprehend fully the particular problems of that particular establishment. Such sources as land maps, plant trips, floor plans, travel and flow charts, organization charts, the Trial Balance, sales literature, statements, and employees should not be overlooked. The sales literature, for example, as catalogs, will inform him of the kinds of goods sold, after which it is not difficult to determine which are fabricated entirely, which in part only, which are purchased in complete form on the outside, and which although purchased on the outside in

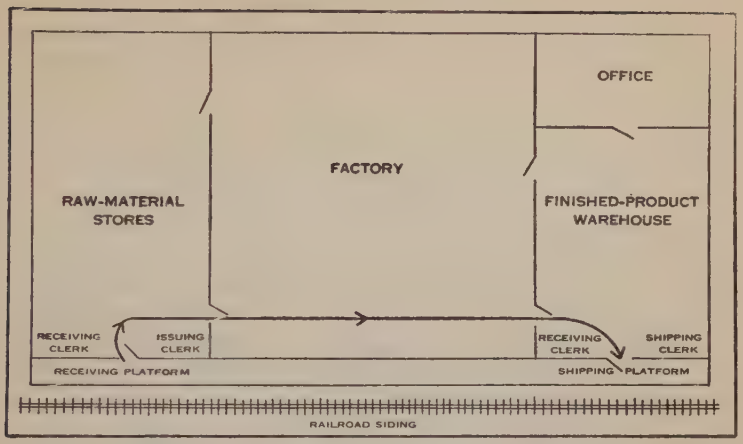
part require some additions in the way of work and material before becoming a salable product.

The planning of an accounting system well may be preceded by a preliminary survey of the entire situation In this regard, interest is manifest in determining such matters as the actual nature and scope of the examination to be made, what are the management's ideas upon the subject, what is the nature of the business, its personnel, its present methods of doing things, and its accounting and office procedure. It is usually advisable to prepare a questionnaire outlining possible points to be covered in the preliminary survey, in order to save time and assist in forming a basis for future study of the situation.

It is essential to know just how complete the system is to be, just how much improvement is desired over old methods of doing things, and just how far is management control involved. In ascertaining the management's ideas, the real phases of the problem or problems are most apt to be uncovered—those which will permit the accountant to clarify the actual facts and to hit upon a successful approach.



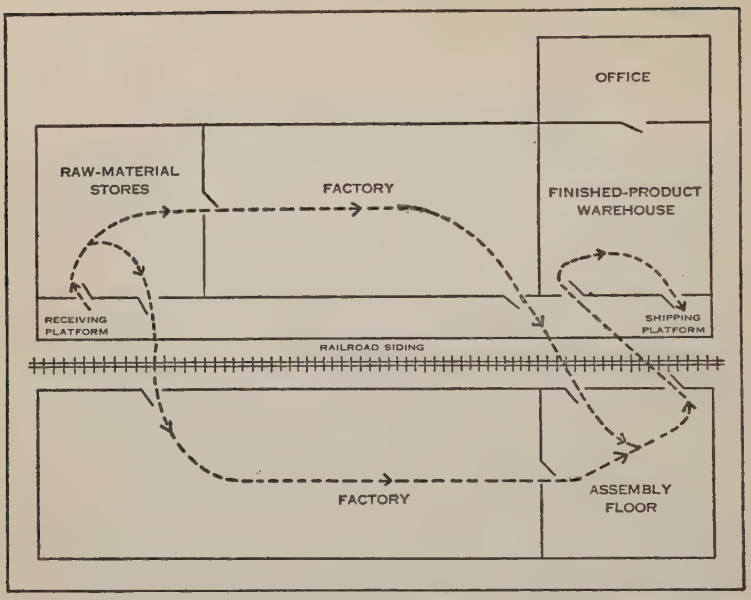
Form 36: Similarity of working organization under various legal forms.



Form 37: Simple straight-line layout—ground plan.

The systematizer must have a vision beyond that of a mere ruler of forms; he should be able to scrutinize matters from the view-point of an executive, so as to confine himself only to those facts which are relative but which at the same time are essential in the task of fusing all parts into a complete workable unit. Such matters as commodities handled, sources of purchases, purchasing programs, price fluctuations, demand, distribution factors, and so forth, have an important bearing upon his being able to give valuable advice as to capital requirements, usable statistics, advertising, collections, and so forth, and make for the production of a report that will be a remarkable piece of work—at least as viewed by the management. Advice of this type frequently is more valuable than that on such prosaic matters as books, forms, rulings, and so forth.

It is essential to dig up facts concerning sales and prices, since the sales trend is important, particularly as to seasonal goods. Hereunder, for example, the question arises as to whether it is expedient to stock the finished product out of season in order to continue a level production schedule during the year—to do this requires capital, there is a danger of having styles and designs change, and unthought-of im-

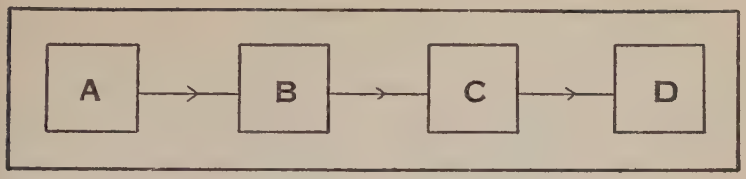


Form 38: Layout for a finished product whose components meet in final assembly—ground plan.

provements may arise. Again, if operators are laid off out of season, the question arises of whether or not a more-than-necessary cost is entailed because of new inexperienced workers coming in with resulting increased supervision out of proportion to what the business can absorb, and because of increased scrap loss. Again, it may or may not be advisable to have capital lay idle out of season. Generally, a sufficient variety of seasonal products should be handled, capable of construction on the same machines, so that when some are out others are in.

In a competitive market, it is assumed to be dangerous to operate at less than normal capacity, since prices must absorb the idle capacity costs, if the percentage of profit is to remain as usual.

The systematizer must be able to sense the situation as to just about how far he can go in recommending changes in personnel duties and responsibilities; an organization chart



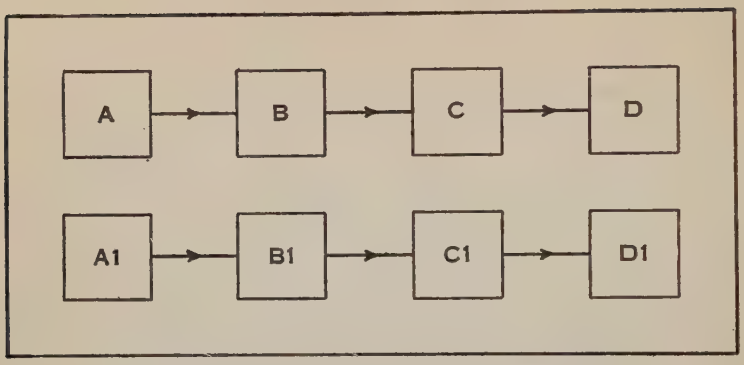
Form 39: Straight-line process flow—single sequence.

of the present situation saves much of a person's time in orienting himself to the current arrangement. A blue-print of the buildings and floor plans, if available, will do much to eliminate incorrect impressions gathered through mere observation. A knowledge of particular departments, of their subdivisions, grouping, and sequence suggests how overhead, supervision, and costs shall be treated; the flow of material through the plant, when known, shows clearly any doubling back that ought not to be present, and may point out just where material units shall be checked up to obtain an in-process control. The handling and storing of materials is always a vital question since inventory shortages have a bad habit of appearing unexpectedly, with a resulting shrinkage in net profit for the period; also, the manner in which material is identified while in process should be ascertained in order to determine the adequacy of control, who is responsible for defective work, and what is the cost of each lot.

Finally, so far as the plant itself is concerned, the systematizer should determine how the various reports are prepared and routed which relate to receipt and requisitioning of materials, production, scrap, salvage, sales, shipments, labor time, minimum stocks on hand, control of inventories and production, and so forth; also, he ought to ascertain exactly what record forms are in use, and how used.

PROPRIETORSHIP

From the proprietorship point of view, the sole tradership is the simplest form of business organization; hereunder, ownership is merged in one individual who has in-



Form 40: Straight-line process flow—multiple sequence.

vested his capital in a business for a profit return. Usually, because of the relatively small amount of capital available to this type of business, its activities are limited, the proprietor acting as general manager.

The second form of business organization is the partnership; hereunder, two or more persons have combined their capital and labor or skill in an undertaking for a profit return. A partnership is dissolved by the death or disability of a partner. And for partnership debts, it is usual for full liability to attach to each partner's property. Ordinarily, partnership activities are restricted to some extent at least; but because of the division of ownership, either the direct responsibility for all phases of the business must be delegated to a general manager—perhaps this will be one of the partners—or each partner may administer one or more separate functions.

As a means of removing partnership limitations, the corporate form of proprietorship is popular. A corporation is an artificial person, it is created by law, and its existence may be perpetual. The proprietors are known as stockholders; their liability usually is equal to the amount of the capital they have invested in the company. Because of the greater flexibility of sources of capital, and life continuity, the corporate type of business is popular, especially among

manufacturing establishments. The board of directors, elected by the stockholders, is responsible for the entire administration of the company's affairs. Effective administration, however, makes it necessary for this board to delegate its responsibility directly to officers or indirectly to them through committees.

The deduction to be drawn from the above is that two types of organization are manifest in a business establishment:

1. The legal form;
2. The working form.

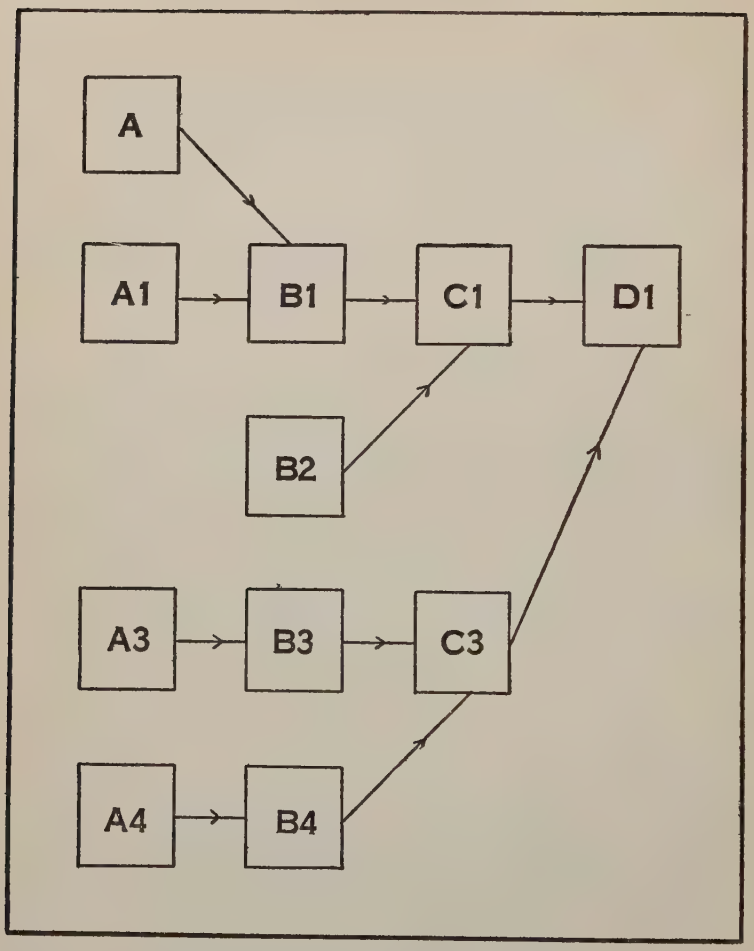
Regardless of what may be the legal form of association, it is necessary thereunder to coordinate and direct the efforts and activities of persons; this is the purpose of the working organization.

Form 36 attempts to show that in any one of the three legal forms of organization the working form may be similar. No necessary corresponding relationship exists between the legal and the working forms of organization.

ORGANIZATION

The organization under survey—scope, intention, and the relation of subdivisions one to the other—is decidedly different in details from that of some other organization. Yet, as to the broad principles, a marked similarity exists between organizations; principles remain constant, whereas details vary.

In harmony with the nature of a business, the organization purpose is to unite or fuse into a complete whole all of the separate individuals who compose the personnel connected therewith so that as a unit they will labor and function for a common end. In other words, the duties of each executive, sub-executive, and worker should so interlock and coordinate that the work of all, as a unit, is cooperative. To attain this end, each and every department head must



Form 41: Process flow—assembly sequence.

cooperate with each and every other department head.

In every organization, capital and effort are of paramount importance. Since these respectively are related to assets and to personnel, they are intimately connected with plant layout and with both the delegation of responsibility and flow of authority. Plant layout is reflected practically in layout, and in travel and flow charts; the delegation of re-

sponsibility and flow of authority are mirrored in the organization chart. The remaining portion of this chapter purports to set out some of the principles underlying the preparation of these charts which have a direct usefulness in system installation.

CAPITAL

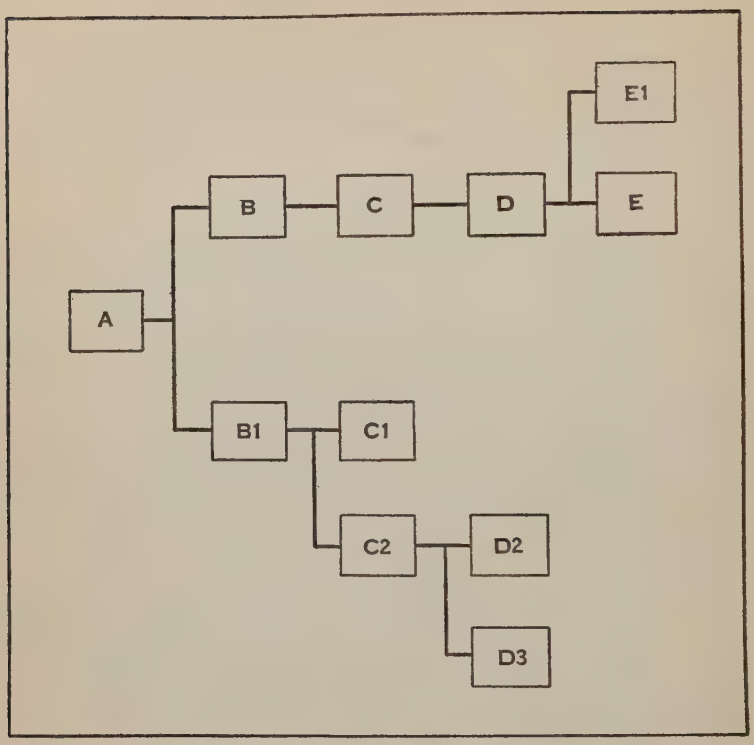
Commercially speaking, this represents wealth employed to yield a profit; it is the life blood of an organization. Capital is necessary before an undertaking actually can engage in business; later, from time to time, additional capital is essential if progress is not to be curtailed. Although a lack of capital probably is predominantly uppermost in the minds of most persons when cogitating upon the possibilities of going into business, it must not be forgotten that inefficiency may exist where too much capital of certain kinds is in evidence.

The capital problem which confronts the small business is essentially similar to that which troubles the larger one; the only difference is that the former may need hundreds of dollars only, whereas the latter may require hundreds of thousands of dollars or millions.

CAPITAL FOR FIXED ASSETS

A business must have sufficient capital to acquire the requisite fixed and current assets. The fixed assets—land and land improvements, buildings, machinery, equipment, and probably the securities of subsidiary companies—are needed for the permanent use of the working organization, being either actually owned or so controlled that the ordinary requirements of the business will be satisfied.

The nature of a company's operations largely decides the amount of its fixed capital. An industrial, for example, requires machinery, whereas all that is necessary in an accounting office may be a desk, a couple of chairs, a typewriter, and a filing cabinet. Since most fixed capital de-



Form 42: Process flow—completed products at various stages.

preciates in value rapidly, the investment therein should not be too great. Further, the value of the fixed assets is related intimately to the life of the business only while the latter is in operation. Hence, if capital assets are more readily rented than purchased, it may be a wise plan to lease them rather than to buy them outright.

Even though it is possible for labor to secure certain results without the use of tools, the better the tools provided for the particular purpose in hand, the better the results. Only the best appliances available, as a rule, produce maximum results.

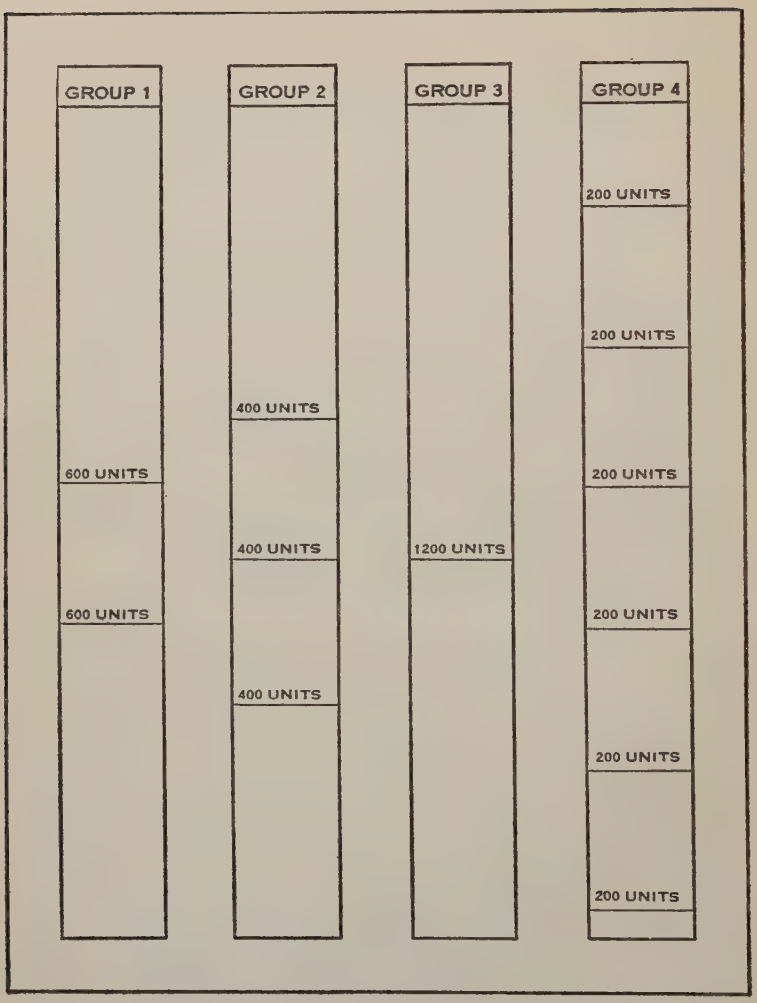
The types of machinery and tools best suited for a small business generally are useless in the large enterprise, other

kinds being necessary in the latter instance. In some cases, adequate production may be secured through the utilization of hand machinery and equipment; in others, only power-driven units will attain the desired production end. In certain instances, an insufficiency of capital prevents the purchase and use of fixed assets which will increase production; in others, the investment in these assets may be so great as to exceed all reasonable justification for having them available, this second possibility, however, being far more remote than the first one.

In any event, average competitive conditions cannot be met satisfactorily unless the fixed assets provided are ample. It might perhaps be true that where the fixed assets are not sufficiently available to meet average competitive conditions, the management is so far superior to that of competing concerns which are well equipped for competitive conditions, that a profitable existence still is possible; yet such a state of affairs proves the exception rather than the rule.

The fixed location or design of the permanent plant markedly affects management results. An unfavorable effect which cannot be changed for some reason or other proves a serious management handicap, and one quite outside its control. Nevertheless, an efficient management periodically considers questions of alterations, improvements, and extensions looking toward a reduction in operation costs; in this connection, the interest cost of the needed capital should be less than the proposed saving.

Since the proprietary interest determines whether or not the requisite capital shall be secured, regardless of how favorably the management may view a particular plan for improving the physical capacity of a plant, the latter may not have its plan accepted by the proprietors. These persons are seldom violently enthusiastic at first. They move slowly and cautiously and raise numerous objections to any and every proposal. In fact, one usually finds that the whole matter will end in some sort of compromise, this being far less satisfactory than the original plan.



Form 43: Work coordination plan for related production centers.

By assuming that both management and proprietorship eventually agree to something with a view toward increased production or toward decreased production costs, the question of how such a plan shall be financed next appears. It may be done through secured long-time interest-bearing

loans, by unsecured short-time loans, or by direct contribution by the proprietors. Even should decision be made in favor of one of the above means, financial and market conditions may affect the execution of the contemplated plan so that it will not be feasible at least for an indefinite length of time.

CAPITAL FOR CURRENT ASSETS

The current assets—cash, raw materials, goods in process, finished product, and notes and accounts receivable—held only for eventual realization rather than for permanent use, must be sufficient to meet the conditions imposed by competing businesses.

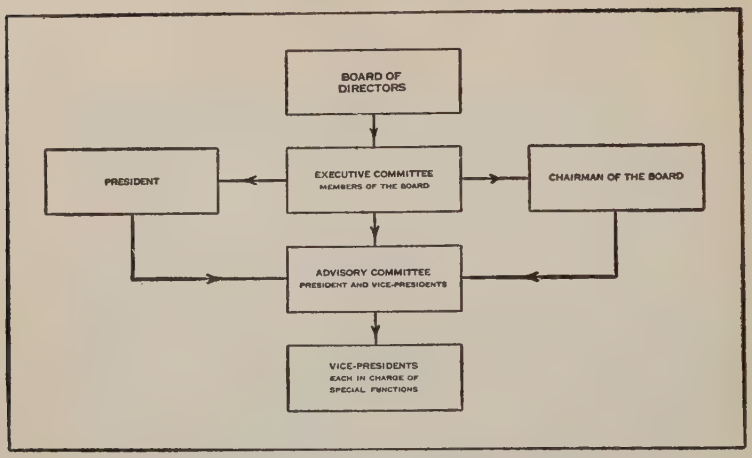
Working capital and current assets are not synonymous, since the former is really the difference between current assets and current obligations—that part of the current assets which does not come from current open accounts or which is not borrowed from funds provided by short-time paper or bank loans. The amount of actual cash required by a company is regulated by a number of factors, such as:

1. Size and nature of pay-roll, and similar current cash demands;
2. Accounts payable as against accounts to be received;
3. Discounts received on payments made in cash;
4. Degree of facility in borrowing temporary funds.

These various matters, at least, must be considered carefully by the management in arranging for sufficient current capital to meet present operation requirements.

The longer the time consumed in the processes and in the collection of receivables resulting from sales of products, the greater, as a rule, must be the product's sale price.

An adequate amount of working capital permits of securing economies not otherwise possible. Advantages may be obtained through being given better purchase prices, through taking the purchase discounts by payment of bills within discount date, and so forth.



Form 44: Chart of major executives' relations.

It should be kept in mind, however, that working capital may be on hand in a useless form. The cash kept in bank may be too great in amount for general purposes, even though to some extent a goodly bank balance may pave the way for securing readily a bank loan when such is required, or to permit the securement of goods at low prices when these are offered at auction for cash. Too much money may be tied up in raw and finished stocks. Although a certain amount of capital may be furnished by accounts receivable, the estimate thereof cannot be relied upon as accurate, because several factors are involved which may have an adverse effect—volume of sales, trade custom as to payment, credit department collections, and so forth.

The proportion of working capital carried by companies is not subject to set rule, although the usual policy of various companies may be determined from their published statements.

The amount of the working capital, as compared with that of fixed, is governed by five factors:

1. Volume of business done;
2. Regularity of business—fluctuation in volume as between seasons or periods;

3. Regularity of raw material supply;
4. Custom of trade as to credit and payment;
5. Length of manufacturing period.

The available capital is productive of the most effective result when the correct relationship exists between the fixed and the current assets. If the two classes are not in the proper proportions, it may mean that a certain section of the plant is idle or that the current assets, as cash, are not entirely as productive as where invested in equipment. To some extent, this proportion is controllable by the management, and the management, to this degree, is chargeable with faults due to such control.

DEPARTMENTALIZATION

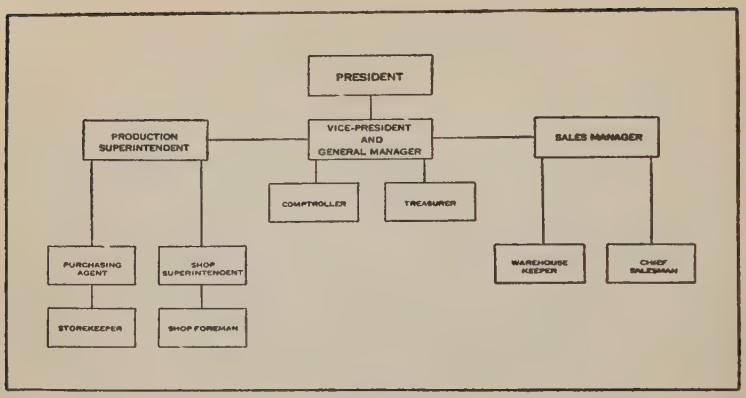
Departmental division is understood but vaguely by many, inasmuch as it means considerably more than a separation of authorities. It is necessitated by the fact that different methods of procedure in the manufacture and marketing of goods require experiences widely diversified. One person may be an excellent purchasing agent but an exceedingly poor salesman or credit man. Two elements control the division of a business into departments:

1. Material manufactured or sold;
2. Character of the labor to be employed, or which actually is employed.

In an industrial company, for example, it is necessary first to classify the various materials used and, secondly, to trace the passage of each kind of material from its raw condition to a finished product step by step; in accord with the requirements shown, the departments are arranged.

CHARTS

The fundamentals of organization constitute the ground work or foundation for the development of accounting principles and procedures, for authority, and for classes of busi-



Form 45: Organization chart.

ness transactions. Therefore, in the analysis of a business, it is necessary to study or survey closely the conditions under which an organization operates. When these have been comprehended fully, one is enabled to interpret the views and experiences of the proprietors and of the management, this being absolutely essential in establishing harmony between these conditions and the general principles of organization and accounting.

In the furtherance of this end, many constructive accountants seem to insist that the first steps in a business analysis should look toward the charting of whatever detail information is available in order to secure a tangible perspective of the predominating relations of the organization. An accounting system should reflect clearly both responsibility and accountability as related to persons for both values and results. Good organization should be readily distinguishable from that which is bad; and the chart of accounts must reflect correctly, as to the various organization units, both responsibility and accountability.

The first charts to which attention is directed concern plant arrangement. Inasmuch as the physical conditions of an enterprise are the result of capital, charts on layout and arrangement have a direct relationship to the abstract

possibilities as brought out above. It is not the purpose in this connection, however, to illustrate from any one specific case since a better idea ought to be secured from a consideration of examples both bad and good.

PLANT LAYOUT

Great variance in individual significance is noticed between the functions of an establishment. The lack of adequate space and position will not affect these equally, some being handicapped thereby considerably more than others. The problem of plant layout is primarily to discover such an arrangement as secures for the most important functions the largest amount of convenience. Whatever may be the particular plant arrangement and machinery layout in an industrial, for example, these have a material influence upon production cost.

The effect of plant arrangement and machinery layout has both an engineering and an accounting significance. To some extent, these may be considered as somewhat similar although, for the most part, if the functions of the engineer and accountant are assumed as being dissimilar, there is considerable dissimilarity between the two view-points. An engineer, it might be said, views the plant layout along the following lines:

1. A given sum of money is available;
2. A certain piece of land is to be used;
3. A given output is to be provided for.

Upon the determination of these, the number, size, and character of the processes can be deduced, and a general estimate is possible of requirements of men, machines, power, buildings, and ground area. The layout then resolves itself into determining mathematically the space relations of the various production centers.

On the other hand, the accountant's problem of layout is to determine the relations of production centers with reference to process sequence and the step-by-step move-

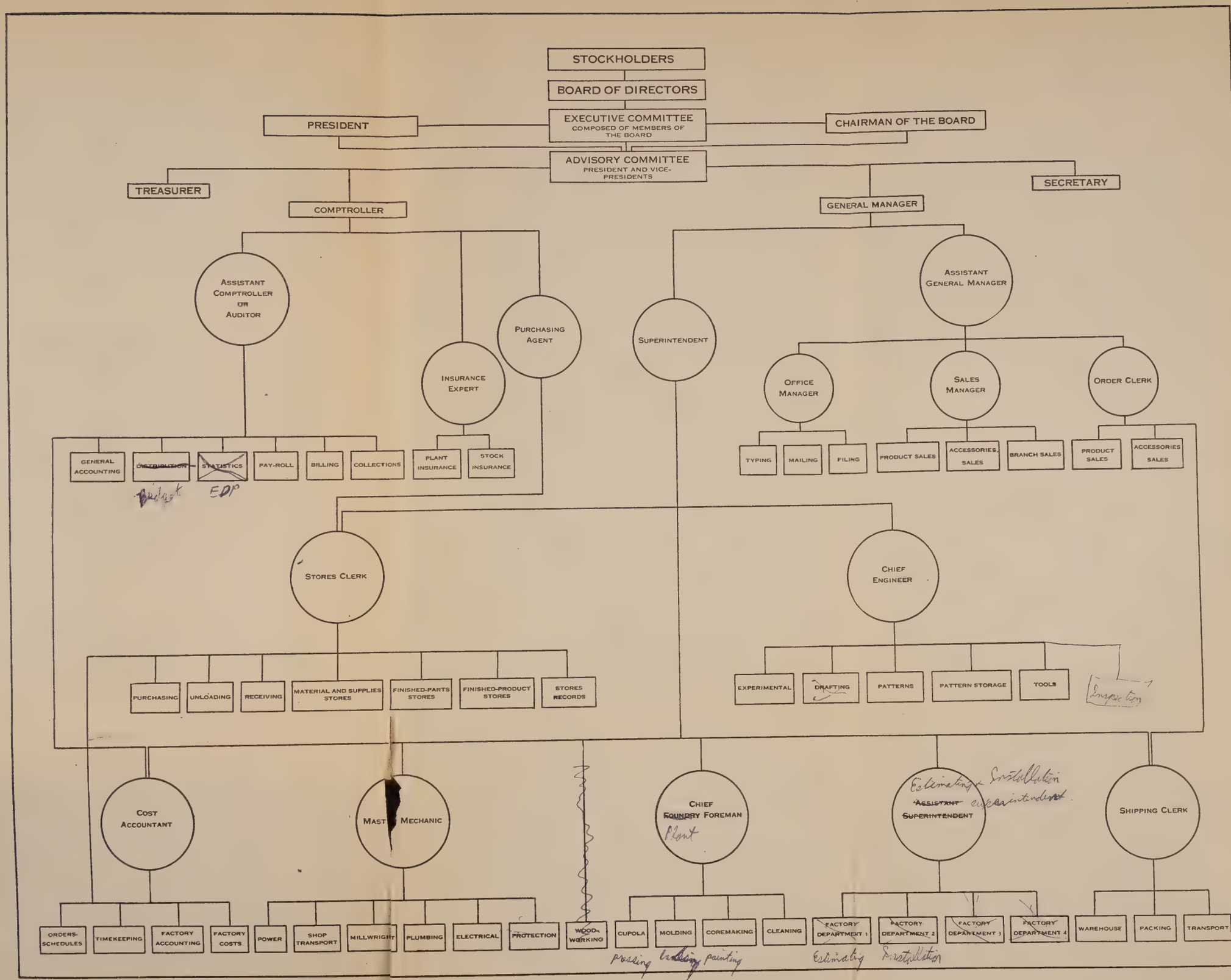
ments of materials and supplies in manufacture from stores through the plant to the finished product warehouse.

In a factory, raw materials and supplies must be carried in quantities sufficient to meet the requirements of at least normal production; it may be, also, that a fair excess beyond the usual set maximum limits is on hand because volume purchases have affected a saving to the business in the reduction of purchase price. At any rate, an inventory of these items on hand somehow is available, but just what has happened to the issues cannot be known until some time later. Hence, one or more stores accounts are necessary to which all purchases are chargeable, and from this point onward the accounting machinery must be so arranged that production is charged with raw materials as consumed thereby, and in addition, with whatever other charges the production accumulates. A layout chart assists in plant arrangement so that certain portions of the system will conform to actual facts.

PLANT TRIPS

Regardless of the business being systematized, the accountant must make numerous trips through the place. And on each of these, numberless questions will register upon his mind; as unearthed, these should be entered in an orderly manner in a notebook of some kind; in fact, the systematizer and his notebook should be inseparable. Physical inspections of property and equipment acquaint him with the present plant arrangement as nothing else can do.

Details should be avoided on the first trip through the plant; only after one has obtained a broad, general picture of conditions should he make detailed studies of particular matters. The result of adopting the reverse order of procedure all too often means that the woods cannot be seen because of the trees. In order to push the detail into the background during this first trip, the systematizer should avoid asking an employee too intimately familiar with de-


STOCKHOLDERS
BOARD OF DIRECTORS
EXECUTIVE COMMITTEE
COMPOSED OF MEMBERS OF THE BOARD
PRESIDENT
CHAIRMAN OF THE BOARD
ADVISORY COMMITTEE
PRESIDENT AND VICE-PRESIDENTS
TREASURER
SECRETARY
COMPTROLLER
GENERAL MANAGER
ASSISTANT COMPTROLLER OR AUDITOR
PURCHASING AGENT
INSURANCE EXPERT
SUPERINTENDENT
ASSISTANT GENERAL MANAGER
OFFICE MANAGER
SALES MANAGER
ORDER CLERK
GENERAL ACCOUNTING
DISTRIBUTION
STATISTICS
PAY-ROLL
BILLING
COLLECTIONS
PLANT INSURANCE
STOCK INSURANCE
Budget
EDP
TYPING
MAILING
FILING
PRODUCT SALES
ACCESSORIES SALES
BRANCH SALES
PRODUCT SALES
ACCESSORIES SALES
STORES CLERK
CHIEF ENGINEER
PURCHASING
UNLOADING
RECEIVING
MATERIAL AND SUPPLIES STORES
FINISHED-PARTS STORES
FINISHED-PRODUCT STORES
STORES RECORDS
EXPERIMENTAL
DRAFTING
PATTERNS
PATTERN STORAGE
TOOLS
Inspection
COST ACCOUNTANT
MAST MECHANIC
CHIEF FOUNDRY FOREMAN
Plant
Estimating
ASSISTANT SUPERINTENDENT
Installation
superintendent
SHIPPING CLERK
ORDERS-SCHEDULES
TIMEKEEPING
FACTORY ACCOUNTING
FACTORY COSTS
POWER
SHOP TRANSPORT
MILLWRIGHT
PLUMBING
ELECTRICAL
PROTECTION
WOOD-WORKING
CUPOLA
MOLDING
COREMAKING
CLEANING
FACTORY DEPARTMENT 1
FACTORY DEPARTMENT 2
FACTORY DEPARTMENT 3
FACTORY DEPARTMENT 4
WAREHOUSE
PACKING
TRANSPORT
pressing
painting
Estimating
Installation

partmental detail to accompany him as guide. Naturally, also, a definite route should be laid down for the inspection to follow; in an industrial, this would commence at the receiving platform, pass through the storerooms into the process departments, out onto the assembly floors and into the finished-stock room, ending at the shipping platform. Regardless of the organization, each particular class of transactions flows through it on some plan or other; the systematizer should endeavor to follow the course of each such flow in order to visualize the correct picture. A competent systematizer undoubtedly has a highly developed picture sense. The ability to picture mentally an entire scheme is as important as that of being able to visualize each case angle separately.

USE OF LAND PLATS

Next, certain valuable information is secured from a study of available maps, drawn to scale, showing land boundaries, buildings, sidings, roadways, and so forth. This scrutiny should enable the systematizer to grasp quickly the relations to each other of the various plant units, to note expansion possibilities which must be carried in mind in order to plan a flexible system, and to formulate leading questions relative to future construction ideas.

Such a map scrutiny permits him to determine what portion of land is used for operating purposes, what portion is available for future plant growth, and what blocks are held merely as an investment. The boundaries of each may be marked upon the map with a colored pencil, and notations made in the notebook later to be referred to when planning the sections of the chart of accounts that have a bearing upon this angle.

Further, this map scrutiny in connection with the personal plant inspection brings to light considerable information concerning building construction which is valuable in setting up the various buildings' accounts, depreciation rates, buildings' expense accounts, and so forth.

FLOOR PLANS

A study of the blue-print floor plans permits one, with the assistance of some person familiar with the particular organization, to lay out departmental boundary lines, passageways, and spaces not used or wasted. Following this, small numbered circles may be marked upon these blue-prints showing the location of each piece of operation equipment. The circled numbers should correspond in so far as possible with the system in use by means of which all equipment is indexed; if the equipment is not marked in accordance with some predetermined plan, a numbering system must be designed for this purpose, unless a recent appraisal report is available from which the equipment numbers therein used may be taken.

After the completion of the above, these floor plans may be converted into so-called travel charts, penciled lines being thereon drawn to show the flow of material from machine to machine. In some instances, this may be accomplished fairly expeditiously by reference to the routing charts which list operations in order of sequence; in others, where routing charts are not available, the travel charts must be constructed from information gleaned from employees and executives familiar with existing conditions. Travel charts show a machine-to-machine flow.

Where an industrial fabricates a number of products, the routing may be so complex and confusing as to give the marked up blue-print travel chart a most unintelligible appearance. Under such a situation, separate charts should be drafted, these probably being flow charts rather than travel charts; flow charts trace flow, process by process, rather than flow machine to machine.

LAYOUT CHARTS

Graphic charts save the accountant much valuable time in permitting him to secure a graphic grasp as to just what

is the existing situation, and to refresh his memory from time to time when subsequently working out various of the system problems; they do not constitute any part of the system itself. They are valuable, also, as a basis for suggesting certain equipment rearrangement, should this appear desirable.

It is the purpose next to illustrate briefly some possibilities which may be encountered, and some which may be assumed as being basically sound.

The simplest type of ground plan for a layout is a single building, in which the raw materials are received at one end and pass in a straight line through to the other end. This is shown in Form 37.

Now if this simple factory commences to expand, it may be impossible to extend the straight line idea owing to the character of the property boundaries. Under such a situation, the flow is most apt to take a curve, and then turn back upon itself.

Parts may be manufactured which pass separately through various series of processes, some of which are longer and some shorter than others, to be grouped into minor assemblies, and later into a complex completed product. This common situation, assuming the same basic straight line idea as before, and the use of two buildings (one is frequently found), is illustrated in Form 38.

If the plant is a new one, with sufficient land for expansion, and has been planned intelligently, the ground plan permits of spreading out without destroying the original scheme. This, for example, may contemplate the use of separate buildings so arranged that the main direction of work flow is at right angles to the direction of possible plant enlargement.

The plant layout charts mentioned above relate merely to ground plans. It is next necessary to illustrate somewhat the matter of process sequence of materials in manufacture. Four simple ideas are offered which, however, are not new. In a factory making brooms, for example, it may be found

that the material moves straight along from one process to another until the end is reached. This is shown in Form 39.

As a second possibility, a number of separate sequences may be found which, to all intents and purposes, move along parallel to each other. This is shown in Form 40.

As a third possibility, one may encounter an assembly sequence—the parts being manufactured which pass separately through series of processes of varying lengths, to be grouped into minor assemblies and subsequently into the finished product. This is shown in Form 41.

The fourth possibility differs from the others in that a raw material is worked upon, process by process, through the course of which a number of finished products drop out by the way. This is shown in Form 42.

From a chart or charts showing process sequence, specific information is secured as to the necessary arrangement of departments. The product being manufactured is analyzed, the necessary departments are determined upon, the floor space required for each department is allotted and balanced up, the equipment is arranged upon that floor space, and the building limits are placed around the whole.

In an existing plant, such a chart almost always is capable of showing improvement possibilities in the physical arrangement of departments.

The matter of keeping all parts of a plant working fully and under even pressure may require study. In order to accomplish results in this connection, the capacity of each production center must dovetail into that of each one preceding and following—which either supplies it with work or takes work from it. For example, if one assumes four groups of production centers, or machines, and a total of 1,200 units as representing full production, the situation may be represented by the conditions shown in Form 43. For increased production upon the basis of the units displayed in this form, the total new capacity of each series of related operations must be some common multiple of the capacities of the separate production centers within each department.

EFFORT

The corporate form of business has brought about a real separation or distinction between ownership and management. Administrative policies are directly influenced but little by the corporate stockholder as such. Stockholders empower the directors to represent them; the directors, in turn, acting usually through a small executive committee of their numbers, place matters largely in the hands of the elected officers. And these officers, in turn, delegate and redelegate down through the successive ranks of the administrative line. The result of all this, especially in large businesses, is that there exist three distinct interests: the investors own the securities; the operatives perform the routine tasks; and the management stands in between these two groups.

The expendable effort which is necessary to secure an organization object is of two kinds: directing or managerial, and physical. Directing effort rests, basically, in proprietorship. In the original instance, actual supervision and direction are carried on by the proprietors; from this point, as business development proceeds, the active management is delegated to persons who represent the proprietorship.

Usually, the president of a company is the general supervisor and to him all other corporate officers report. One or more vice-presidents are apt to be noticed, who succeed to the president's duties in case of presidential disability; further, each vice-president is charged, also, with certain special duties. The corporate secretary records the actions of directors and stockholders; further, it is usual for him to be assigned numerous others. The treasurer receives and disburses moneys and frequently has charge of the accounting and the statistical work. These officers, therefore, are seen to have two distinct classes of duties—some purely corporate, and others concerned strictly with operation.

Physical effort provides a separate classification, having to do with the manual exertions necessary in connection with

the productive processes. Usually, both of these classes of effort—managerial and physical—are not united in any one person; infrequently, some one is found who, in addition to directing others, performs manual labor.

Clerical labor, as is performed by the various office clerks, although neither managerial nor physical in character, may be regarded as managerial inasmuch as the clerical group is composed of assistants to the managerial staff.

Efficiency in a business organization is dependent largely upon individual effort and upon the proper coordination of the efforts of different persons. The organization object cannot be accomplished fully unless there exists high individual efficiency and proper effort coordination.

ORGANIZATION CHARTS

Inasmuch as effort is expended by persons, the final specific problem principalized in this chapter relates to the so-called organization chart, this being a most important aid to the system accountant. Since an accounting system is intended to reflect personnel responsibility and accountability for values and for results, such a chart shows graphically the relations of personnel components to each other. The administrative, manufacturing, and commercial activities are displayed thereon in departmental form, the lines of authority and responsibility are indicated, and the relations of authority to the business as a whole from stockholders downward are set out.

Such a chart is the foundation for administrative control, for accounting, and for general management—if properly constructed. Through its use, questions of authority are cleared up readily, and the accountant has a definite ground work upon which to lay out and check the accuracy of his chart of accounts.

An organization chart may be constructed in any one of three ways:

1. The legal framework of the organization first is drafted,

working down to the chief executive, then determining his immediate subordinates, and so on along until all employees have been included.

2. The activities at the base line of the chart are first considered, and then the work progresses upwards.
3. A combination of the above two methods is followed; the rough plan is sketched by (1), and this is adjusted and corrected by (2). This third scheme seems the best one to follow.

Naturally, such a chart should reflect not only actual conditions, but it must provide for new divisions which it may reasonably be hoped will come in the course of time; hence, changes or revisions in the general organization as contemplated by the executives must be given serious weight.

Although the direct responsibility of each function of a business is delegated to a certain individual, close cooperation must exist between the various heads. Engineering and sales departments, for example, must be in close contact with each other; the former should have in mind constantly the nature of the products in demand, as sensed by the sales department, and the latter must be fully informed regarding new products which are being designed and developed, in order to create a market for them. The sales and manufacturing departments should work together closely so that manufacturing facilities may be kept consistent with demand, and that delivery promises may be made to agree with manufacturing schedules. The law department is to be consulted about matters relating more directly to other departments—sales contracts, taxes, business policies, and so forth; each department is dependent more or less upon one or more of the others.

Although the systematizer can proceed to a certain extent in his construction of an organization chart merely by means of inspection and through executive conferences, in a large plant, at least, he will find that a full completion thereof is dependent to a considerable degree upon the data contained

in the floor plans and the travel and flow charts referred to above. These data permit him to verify the portions of the rough sketch—to change and alter as necessary in order to reflect the actual situation.

When the rough chart has reached the desired form, the finished plate is drafted. Regardless of whether a person functions in one or in more than one capacity, divided authority must not be permitted; if necessary, a complete revamping of the organization of a plant should be undertaken, since if that is not done, an adequate accounting system cannot be installed therein.

FORMS ILLUSTRATED

The illustrative forms offered with this section of the chapter are designed to emphasize only principles of organization chart construction. Existing conditions, of necessity, alter cases and cause differing layouts. The large chart is fairly typical of an industrial plant of elaborate proportions, providing for some 59 departments. These charts are shown as Forms 36 to 46, inclusive.

Problems

(*a*) With the large industrial organization chart as a basis, Form 46, outline, as you would have them, the departmental divisions thereon shown, using the following schedule as a guide:

I. Summary

A

Commercial—Departments Numbers....
Manufacturing—Departments Numbers....

B

Commercial:
  Administrative—Departments Numbers....
  Selling—Departments Numbers....
Manufacturing:
  Non-Productive—Departments Numbers....
  Productive—Departments Numbers....

II. Detail

Detail departments in order from numbers 1 to 59, to be grouped as per "Summary" just above.

(*b*) Upon the basis of the following list of the personnel of a bank, prepare a chart by means of which the relationship to each other will be shown:

President	Vice-President
Cashier	Auditor
Receiving Teller	Paying Teller
Note Teller	Mail Teller
Exchange Teller	Loan Clerk
Discount Clerk	Correspondence Clerk
Stock and Bond Clerk	General Bookkeepers

(*c*) Lay out a complete administrative chart for any manufacturing concern with which you may be familiar or to which you may secure access to show the different departments and departmental heads from the Board of Directors down, so as to place responsibility, indicate control, and show to whom reports should be made.

X

CHART OF ACCOUNTS: GENERAL

Adequacy. Symbolization. Number symbols. Letter symbols. Mnemonic symbols. Procedure generalities. Procedure plan. Organization chart—usefulness.

As the necessary bookkeeping increases in volume, an increasing need arises for a more substantial check upon the accuracy of the work done than that afforded by the usual Trial Balance. In so far as the records themselves are concerned, this has been met by the voluminous use of the controlling account and the columnar Journal. These two factors also assist materially in eliminating excess labor. Further, the adoption of the principle of internal check does much to compel the accuracy of original calculations, entries, and procedures.

The above development is interlocked closely with the major divisions of system building having to do with account classifications or charts of accounts, Ledgers, statements, and Journals. Account classification development is most important. The controlling account ~~expedient~~ cannot be used properly, at least to its fullest extent, unless the chart of accounts is given serious study; the chart adopted controls largely the Ledger arrangement and the columnization of the Journals; and the usefulness of the various statements desired as a basis of managerial control are dependent to a considerable extent upon the completed chart of accounts.

It is the purpose of this chapter to consider to some extent the general problem of the chart of accounts—to indicate the major working principles underlying its formation, to show certain limitations that must be carried in mind, to

gain some familiarity with development procedure, and to illustrate by presenting certain representative charts.

ADEQUACY

A chart of accounts should be prepared with two basic ideas in mind; to secure:

1. A properly set up Balance Sheet;
2. An adequately constructed Profit and Loss Statement.

A Balance Sheet discloses many vital facts. Capital, owned or borrowed, which is invested in a business, must be accounted for in a correct manner; the relationships existing between the business as a distinct body and outsiders must be disclosed; it must provide the information which shows the relationships of the business' interests as between themselves; and it must distinguish between liens general and liens specific. Again, the components of controlled properties must be indicated clearly.

In a like manner, the Profit and Loss Statement sets forth many things which reflect management efficiency. Income-producing factors must be set out in their correct relationships for purposes of study and comparison. Expense components affecting costs require adequate expression, also, for purposes of study and comparison. Nevertheless, regardless of how scientifically one may desire a chart of accounts to be prepared, many factors which influence the profit result cannot be adequately expressed in monetary symbols. Therefore, the Profit and Loss Statement does not always unerringly interpret efficiency.

Also, certain fundamental limitations surround the most perfect charts of accounts. Matters of policy cannot be reflected entirely by accounts, although if the chart is given serious thought the resulting product at least should reflect some vital portions thereof. The allocation of expenses to particular accounts frequently depends upon factors other than pure accounting; expediency, for example, caused by the tax law requirements may render desirable a

certain treatment which good accounting cannot sanction.

Each account should carry a title which is accurate in reflecting, in so far as possible, the purpose for which the account is to be used. Further, the preparation of a satisfactory chart of accounts requires the ability to know when to stop classifying and sub-classifying. The more enthusiastic a systematizer is with his work, the more apt is he to lose the requisite perspective of the case in hand. In his efforts to have account titles reflect and describe accurately the items to be grouped thereunder, he is prone to classify and sub-classify until the point is reached where the resultant code is entirely out of harmony with the specific requirements of the situation.

Whatever the ultimate appearance and size of the completed chart of accounts, it should produce the necessary and required amount of information for effective managerial control. If too detailed in character, each account may gather together only a few items during an accounting period, the total amount of which may be inconsequential. In so far as is feasible, the wishes of the management should be respected; and its usefulness should not be less in degree than the cost of maintenance.

SYMBOLIZATION

Fundamentally, a chart of accounts is developed from the general or generic accounts of:

1. Expenses } Profit and Loss progress
2. Income }
3. Assets }
4. Liabilities } Balance Sheet results
5. Proprietorship }

Each of the above is subdivided as to elements as the circumstances justify.

The arrangement of the accounts upon the Ledger or Ledgers is subject to considerable variance; but in any event, the facilitation of statement preparation should be

kept prominently in mind. When the accounts are relatively few in number, the General Ledger is entirely adequate as their repository. But as the number of accounts expands, the danger of having too much detail in the General Ledger should be recognized and steps should be taken to avoid this situation; subsidiary Ledgers are provided and portions of the detail allocated thereto.

When a section of the detail accounts is withdrawn from the General Ledger for settlement in a subsidiary Ledger, the eliminated group is replaced by some controlling account. And as the detail accounts increase in number, and the subsidiary Ledgers multiply, increased difficulty is experienced in finding particular accounts readily.

In order to locate specific accounts quickly, some systematic method of earmarking each account must be adopted. The means chosen for this purpose is to attach to each some symbol or other which, when read, suggests the account to the reader; the symbol scheme is so developed that each particular unit therein is in definite sequence, this permitting ready Ledger location and designation.

Various methods of symbolization are used—some good, some bad, and some entirely adequate up to a certain point but impossible of application beyond. A good system of symbols should possess four qualities:

1. *Simplicity coupled with efficiency.* A simple system by no means may be an efficient one. Under certain complex situations, simplicity alone may result in absolute inadequacy.
2. *Definiteness.* Each separate symbol represents one particular thing, and each specific thing should be represented by a symbol.
3. *Easy remembrance.* Each symbol should be capable of being remembered easily; this gives it a mnemonic quality which makes constant reference to a key unnecessary. This quality, also, furnishes a check upon accuracy, since, if a symbol is made in an incorrect manner, the next person reading it observes that it is meaningless.

4. *Brevity.* No particular difficulty is encountered here since any symbol is briefer than the name for which it stands.

Symbolization is carried out through the medium of numbers and letters and combinations of numbers and letters.

NUMBER SYMBOLS

In the development of the usual numeral system of account designation, only the 10 digits are available. These, however, may be so handled as to give some variation in application. The decimal method contemplates the use of whole numbers for major divisions and decimals for subdivisions. Although by this means indefinite expansion is possible without a change in numbers being necessary, the mnemonic quality is missing, and this lack entails the constant use of a key. Further, decimals cannot be made satisfactorily with a pen without danger of blotting. An example of the above method of symbolization follows:

Major divisions:

1. Current Assets
2. Inventory Assets

And so forth.

Detail accounts:

1. Current Assets
   - 1.1 Cash in Bank
   - 1.2 Petty Cash
   - 1.3 Notes Receivable
   - 1.4 Accounts Receivable
   - 1.5 Bonds and Other Investments
2. Inventory Assets
   - 2.1 Melting Stock Metals
   - 2.2 General Stores
   - 2.3 Finished Castings
   - 2.4 Work in Process

A variation in the above, which eliminates the strictly decimal feature, but which retains indefinite expandability, follows:

1– Current Assets

1– Cash in Bank
2– Petty Cash
3– Notes Receivable
4– Accounts Receivable
5– Bonds and Other Investments

2– Inventory Assets
1– Melting Stock Metals
2– General Stores
3– Finished Castings
4– Work in Process

When the account of Cash in Bank is referred to, for example, the designation is 1–1.

A second variation is noticed in the following illustrations. Hereunder, expansion is limited.

SUMMARY ACCOUNTS

1. Operation Expense	1. Expense
2. Operation Income	2. Income
3. Financial Expense	3. Assets (other than 4 and 5)
4. Financial Income	4. Investments
5. Current Assets	5. Prepayments
6. Fixed Assets	6. Liabilities (other than 7)
7. Current Liabilities	7. Items Accrued
8. Fixed Liabilities	8. Valuation Reserves
9. Proprietorship	9. Capital and Surplus

DETAIL ACCOUNTS

1 Operation Expense
11 Cost of Sales
111 Purchases
12 Buying Expense
121 Salaries of Buyers
122 Traveling Expense of Buyers
123 Office Expense
124 Sundry Buying Expense
13 Selling Expense
131 Salaries of Sales Force
132 Expenses of Salesmen
133 Office Expense
134 Packing and Shipping
135 Advertising
136 Sundry Selling Expense

14 Delivery Expense
- 141 Wages of Delivery Drivers
- 142 Maintenance—Delivery equipment
- 143 Depreciation—Delivery Equipment
- 144 Sundry Delivery Expense

15 Administrative Expense
- 151 Office Salaries
- 152 Office Expense
- 153 Repairs and Maintenance—Building and Equipment
- 154 Depreciation—Building and Equipment
- 155 Insurance
- 156 Taxes
- 157 Heat and Light
- 158 Sundry Administrative Expense

The above portion of the detail schedule relates to the first summary grouping shown above.

Another numerical scheme which has nothing of decimals in its make-up, comprehends the allotting of a series of numbers to each major group of accounts; for example:

100–700	Assets and Deferred Charges
800–1100	Capital Stock, Liabilities, Reserves, and Surplus
1500–2500	Profit and Loss Accounts

Numbers not needed at present are left blank for future expansion. The assets and deferred charges group above may be further expanded as under:

100 Land, Buildings, and Equipment
Details in Subsidiary Ledger. (Detail Account numbered from 101-199)

200 Inventory
Details in Subsidiary Ledgers

300 Customers
Details in Subsidiary Ledgers

400 Sundry Debtors
Details in Subsidiary Ledgers

500 Notes Receivable
Details in Subsidiary Ledgers

600 Cash
- 601 Cash in Bank A
- 602 Cash in Bank B

610 Petty Cash Fund
700 Deferred Charges
701 Prepaid Interest
702 Prepaid Insurance
703 Prepaid Taxes
704 Organization Expense

Again, the numeral system of classification may be even more simple than the above. The major account groups are not given numbers, but the detail accounts are numbered from 1 up, every once in a while some numbers being skipped to provide for expansion, as:

Current Assets
1. Cash in Bank
2.
3.
4. Cash on Hand Undeposited
5. Cashier's Change
6. Petty Cash Fund
7.
8.
9. Stocks and Bonds of Other Companies
And so forth

A common numeral system of classification, particularly useful for unlimited purposes of expansion, and found probably more in factories than elsewhere, allots each major account a number from 1 up, as already illustrated. Then for the subclassifications the numbers 001, 002, 003, and so on, are used, this arrangement facilitating the use of tabulating and sorting machines through the medium of punched cards. For example, the factory plant and equipment accounts may be numbered as under:

1 Grounds
2 Buildings
3 Permanent Fixtures
4 Machinery
5 Small Tools
6 Patterns
7 Shop Fixtures
8 Factory Office Furniture

Now, if a charge occurs for permanent fixtures related, say, to the power plant, the account designation would be 3–002, under which 3 denotes the Ledger account and 002 the account upon the subsidiary Ledger. Again, if it is necessary to separate charges by departments, each department should be assigned a specific number by which it always will be known, a number of at least three digits. This number follows the specific account number; for example, if the Shop Pay-Roll Department is 103, the purchase of a machine therefor may be shown as 4–002–103, under which 4 is the account number, 002 the class of machine, and 103 the department.

On the whole, regardless of the many systems of classification in use, none accomplishes the results desired in a simple and satisfactory manner better than the numerical system. Other systems are mentioned in subsequent sections.

LETTER SYMBOLS

Account designation by letter symbols alone occurs primarily where the symbolization is presumably entirely mnemonic. And even here, however, numbers frequently are used in combination with letters, as where, for example, tabulating machines are used; but under this condition, since tabulating machines do not lend themselves readily to letter keys, a letter system may not be at all feasible. Numbers are used, also, in combination with letters to designate jobs or dimensions; again, they may be used for the components of a class since these latter elements frequently are so numerous as to exceed the limits of the alphabet. Again, they are found at the beginning of operation symbols to specify sequence of operations on the symbolized piece.

Inclusive of both lower case and caps, some 44 letters are available for use. The letters *I*, *O*, and *Q*, are omitted because of possible confusion; these may be confused with the figures 1 and 0. Some omit the letter *Z*, because it might

be taken for a 2; others use this letter. It is assumed, generally, that letter symbols may be easily learned so that a key is unnecessary. Yet, inasmuch as it is frequently necessary to utilize a half-dozen or more letters to designate a function or operation, ease of remembering may be more theoretical than actual; in such event a key must be available.

Mnemonic letters, as distinguished from those assigned without regard to correlation of words with sounds, are used in such combinations that the account for which they stand is understood readily, at least in theory. A separate consideration of mnemonic symbols is offered on page 201.

Brief illustrations of letters and numbers in combinations are given below; the first refers to uniform accounts for three classes of telephone utilities as developed by one regulatory body (Wisconsin Railroad Commission).

OPERATING EXPENSE (*Commercial*)

CLASS C	CLASS B	CLASS A
15. Commercial Expense. .	15*a*. Collection Expenses . .	15*aa*. Pay Station Salaries and Commissions
		15*ab*. Collection Salaries and Commissions
		15*ac*. Collection Supplies and Expense
	15*b*. Uncollectible Accounts (Reserve charge)	15*b*. Uncollectible Accounts (Reserve charge)
	15*c*. Promotion of Business Expenses	15*ca*. Promotion of Business Salaries and Commissions
		15*cb*. Promotion of Business Supplies and Expenses

The second is partly mnemonic in character:

A Land
AP Plant Land
AP1 Purchase Price
AP2 Grading and Improvements

AE Expansion Land
- AE1 Purchase Price
- AE2 Grading and Improvements

AV Investment Land
- AV1 Purchase Price
- AV2 Grading and Improvements

The following portion of a chart of accounts illustrates perhaps better than the preceding examples the letter and numeral symbols, these being, presumably, mnemonic and universal. Two plants are operated, one in Syracuse and one in Buffalo. The chart is skeletonized since no comment is offered as to what shall be the charges and credits under each classification:

PLANTS

I Syracuse
II Buffalo

FACTORY PROCESSES

C Shear
L Layout
B Press, and Brake
K Case-making
M Device-making
P Plating and Polishing
D Dipping
F Finishing
A Assembly
T Toolroom

PAY-ROLLS

1 Superintendence—Factory
2 Superintendence—Sales
3 Superintendence—Office
6 Salaries—Factory
7 Salaries—Sales
8 Salaries—Office
11 Wages—Foremen
12 Wages—Mechanics
13 Wages—Checkers
14 Wages—Oven Unloaders
15 Wages—Truckers
16 Wages—Sweepers
17 Wages—Watchmen
21 Officers—Salaries
22 Directors—Fees

MATERIALS AND SUPPLIES

100 Raw Material
110 Hardware—Fittings
120 General Supplies
130 In-Process Stock
140 Parts Stock
150 Finished Stock

CAPITAL

200 Rent
210 Insurance
220 Cash Discount
230 Bad Debts

MISCELLANEOUS

300 Power
301 Trucking
302 Garage
303 Gas
304 Depreciation
305 Repairs
306 Stationery and Printing
307 Advertising
308 Waste in Steel-cutting
309 Waste in Inventories

Under the above scheme, each classification of expenditures is allotted a series of numbers. The manufacturing processes are suggested by mnemonic symbols, and the plants are designated by Roman numerals. The foremen, for example, might be employed in any one of the processes in either of the two factories. If such an expenditure occurs in the Syracuse plant, the plant symbol is I; the process is Assembly, shown by A; and the Foremen's Wages, indicated as 11; so that the symbol reads, as it would be written, IA11. If this expenditure occurred at Buffalo, the reading would be IIA11.

MNEMONIC SYMBOLS

In the minds of many persons, the four tests laid down for a good system of account designation are met adequately by a combination of letters predominantly mnemonic in suggestion; at times, a sprinkle of numbers is added in certain places. The fundamental idea hereunder probably has been worked out in the best manner by F. W. Taylor. The letters used are suggestive in so far as is possible, either by means of the initial letter of the name or something equally significant. Numbers are utilized for job indicators or for dimensions, as shown by their special position in the symbol; and they are used for the components of a class where the ultimate elements are so numerous as to exceed the limits of the alphabet.

The mnemonic system is especially applicable in stores accounting, a special symbol being allotted to each kind of stores. Through the use thereof, the amount of writing required in making out requisitions is reduced. Also, a symbol arrangement of stores in the storeroom is believed to render it an easy matter to locate items at will, unless the stock is of such large volume and so minutely subdivided that numerous symbol combinations require a host of letters.

To illustrate the building up of a mnemonic system of account designation, consider briefly the stores function in

a factory manufacturing veneer machinery, six different types. For stores other than castings, the following summary was constructed:

A Fastenings
B Bearings
C Electrical Supplies
D Bar Stock
G Lubricators and Oilers
J Springs
K Knives and Saws
L Liquids
M Powders
P Piping
R Racks
S Sheet Materials
T Tools, Small
W Lumber
X Miscellaneous
Y Yardage
Z Markings—Pattern Figures

The above summary groups were subdivided, the following being illustrative:

A Fastenings
- AB Bolts
  - ABC Carriage Bolts
- AP Pins
  - APE Escutcheon Pins
- AR Rivets
  - ARB Brass Rivets
- AS Screws
  - ASC Cap Screws
    - ASCH—Hexhead Cap Screws
- AN Nuts
  - ANH Hex Nuts

C Electrical Supplies
- CB Bulbs
- CF Fuses
- CM Motors
- CS Switches
- CW Electric Wire

All parts upon which labor is expended in machining have distinct markings corresponding to that of the machine on which they are assembled. The initial letter signifies the machine with which it is to be assembled.

D is for Drier
C is for Clipper
L is for Lathe
B is for Bushel Basket Machine
P is for Pony Gang Rip Saw
H is for Hydraulic Press

The second letter denotes the type of material from which it is to be machined, or whether it is composed of two or more finished parts assembled into a larger part, as:

B Casting
C Bar Stock, and so forth
D Assembled Parts of B and C

The combining of the symbols in the last two paragraphs is shown as follows:

DB 2000 Veneer Drier Plate 72 x 108 (casting)
DC 1952 Veneer Drier Base Rod 4 x 106 (steel)
DD 128 Veneer Drier Assembled Bed (two finished parts assembled)

The numbers following the letter or letters denote the individual part as found upon a Machine Parts List.

PROCEDURE GENERALITIES

In order to develop an adequate chart of accounts, a definite procedure should be established so that the necessary work may be done logically and thoroughly. The starting point, from one method of approach, was shown previously in the last chapter; it is proposed to advance this particular discussion later and develop it further.

The conditions of the particular business must be scrutinized closely; on the one hand, the undertaking may be an entirely new one, whereas, on the other, it may be one that has been in existence a long time. In the latter case, a defi-

nite study basis exists. The analysis of operations hereunder should be full and complete, inasmuch as the nominal group of accounts causes a considerable amount of trouble. Organization form and control must be given serious thought; otherwise, the definite location of responsibilities cannot be made. Responsibilities follow control.

The code should be devised to direct management attention to groups of related expenses. Past expenses may be determined by analysis of each divisional operation group, and based upon the conclusions drawn herefrom, the necessary accounts are provided. Each expense element should be given an account where past experience, from a practical view-point, demonstrates that this is desirable. Expansion must be considered. Expenses always tend to increase rather than decrease; those which may appear insignificant today might require each a separate account at a later time. The volume of business influences directly the importance of any special account.

A tentative classification at the outset frequently is the better solution to have in mind, and particularly so if the systematizer has any hesitancy as to his specific knowledge of that type of concern. As experience accumulates, revisions are made.

For a new business, the development of a chart of accounts may prove to be a more difficult task than for an old one. If experience has been had previously in a concern of a similar nature, the problem may not cause much trouble, but if the contrary is true, then the formulation of this code must be a slow process, since it is based upon a close study of organization and processes.

In the beginning, more than a temporary line-up ought not to be considered. Assuming that the fundamental scheme adopted is elastic, the systematizer (if given the opportunity) might develop the chart piece by piece. In the beginning, certain accounts are necessary to reflect the correct opening. Then, after the first month has closed, the temporary records used therefor may be analyzed and the

necessary accounts added to the outline, after which the month's transactions are written up in correct form. Month by month this same process may be followed, so that eventually, say, after the passage of the first year, the final form of each of the requisite records develops.

PROCEDURE PLAN

The experienced system organizer does not develop his mechanism in an indexual manner, but the beginner will do well to make certain that a definite procedure is followed so that the overlooking of certain prime factors does not occur. An experienced technician lays out his work carefully, and his notebook is used constantly, but his plans and his notes are not so elaborate in detail as those of the careful and conscientious beginner.

The first pages of the notebook contain various memoranda as to what is to be accomplished under the employment contract, information gleaned from the conferences which occurred prior to the employment, names of officers and department heads, nature of the business, and so forth. The information secured from the various trips through the plant, and from answers to the many questions raised as each business function was studied, all have a definite effect in crystallizing one's mental conception of what accounts are necessary and what shall be their ultimate arrangement. In order to bring out the idea more clearly, let it be assumed that the notebook is to be written up so that when completed its grouping of the written pages conforms to the same order as that followed by the accounts in the chart.

The first step in this direction, therefore, is to open up a page in a loose-leaf notebook for each group or division of accounts that it is contemplated will be used. Such grouping, naturally, must vary, systematizer against systematizer, as well as business against business; the following as to assets is illustrative:

Current Assets ..... Page 11
Inventories:
Stores 12
In Process 13
Expense Pools (General) 14
Expense Pools (Departmental) 15
Stock 16
Deferred Charges 17
Fixed Assets 18
Good-Will and Patents 19
Sundry Assets 20

It is assumed that the first 10 pages of notes are devoted to informational comment collected from sundry sources.

A quick method of becoming acquainted with the existing accounting system is to study a copy of the Trial Balance with or without figures. Amounts are not of as much interest as accounts except to show the volume of transactions. The beginner will find the Trial Balance of great use, particularly as a means of checking himself against omission of related accounts from the chart; in other words, one account ought to suggest the others that are related thereto, as:

Buildings	Buildings
	Reserve for Depreciation
	Depreciation
	Repairs and Maintenance
	Reserve for Repairs and Maintenance
	Mortgage Payable
	Interest Expense
	Interest Accrued
	Taxes
	Taxes Accrued
	And so forth

Assume that the Trial Balance in part contains the following accounts concerned with assets:

Cash
Notes Receivable
Customers
Land and Building

Machinery
Tools and Equipment
Furniture
Investments
Raw Materials
Factory Supplies
Good-Will

Upon the basis of the above, a brief analysis is made for illustrative purposes.

Cash. Several bank accounts are found; the cashier has a fixed change fund and a petty cash fund which is not operated upon an imprest basis; the paymaster has a cash fund varying in amount from time to time. The above suggests roughly the following for inclusion on page 11 of the notebook referred to above.

Cash in Banks
Cashier's Change Fund
Cashier's Petty Cash Fund
Paymaster's Cash Fund

Also, there is suggested one (or two) accounts for Overages and Shortages to be included somewhere under the nominal subdivisions.

Notes Receivable. This suggests at once the following accounts for entry on page 11 of the notebook.

Notes Receivable—Customers
Notes Receivable—Other
Reserve for Doubtful Notes

Also, certain other accounts are thought of through inference, these to be placed elsewhere in the notebook.

Notes Receivable Discounted
Loss on Notes Receivable—Customers
Loss on Notes Receivable—Other

Customers. An analysis of this account develops the following: Many accounts are doubtful of collection, having been on the books a long time; accounts exist with officers, employees, and others who are not customers, all of which are grouped as customers' accounts. Hence, the

following jottings in the notebook, on page 11, are in order:

Customers' Accounts
Customers' Accounts in Suspense
Sundry Debtors
Reserve for Uncollectable Accounts

By inference, also, the account of Bad Debts must be provided for elsewhere in the notebook.

Investments. This is found to consist of a block of stock of another company, and sundry bonds held for investment. Therefore, on page 11 of the notebook the following are posted:

Capital Stock in Other Companies
Bond Investments

Some might include the above under the fixed assets group on a subsequent page. Also, the following accounts are suggested by inference, each of which should be allocated properly to the notebook:

Dividends Received
Bond Interest Received
Loss on Bond Investments

Each of the other accounts in the Trial Balance is analyzed and handled in a manner similar to the above. Of course, when an account is found which relates to the factory, the systematizer may not then be in a position to decide intelligently what the proper new accounts shall be until further investigation, in which case he enters the account on the proper notebook page and places a question mark after it; for example:

Stores (?)

In order to secure the proper development of the factory accounts, it is necessary to utilize the information acquired from floor plans, travel and flow charts, and the organization chart.

In order to classify stores properly, one should keep in mind, first, the distinction between stores and stock; stores

represent materials and supplies, whereas stock concerns products in a completed form, as well as finished parts to be used later either in some fabrication process or in an assembly process. The stores department must be studied carefully to determine what classes of stores are carried so as to provide a separate controlling account for each class. For example, the following groups may be found:

Manufacturing Materials
Factory supplies
Boiler Plant Fuel
Small Tools
Castings

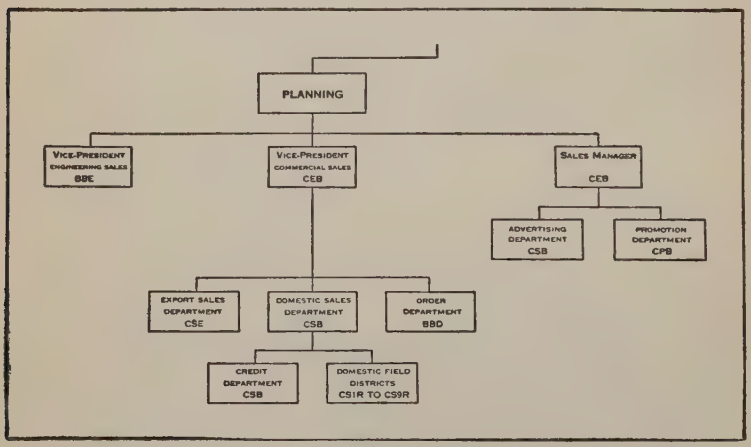
An explanation of the complete development of a chart of accounts for an industrial along the lines suggested above requires almost a book by itself; hence, a full treatment cannot be given in one chapter, which, of necessity, must include other matters in addition to showing how a classification may be developed.

When the notebook work has been nearly completed, it is necessary to verify what has been done and then to construct the complete chart. The rough classification as developed never should be passed over lightly on the assumption that everything is in order. One must be absolutely certain that the proper articulation is in evidence between the accounts; hence, each account in the notebook must be studied carefully with the idea of making certain that every possible offsetting or related account is in evidence. A Sales account without an Accounts Receivable account would be ludicrous unless all goods were sold for cash down with order.

Next, the notes in the book are sorted and rearranged, so that accounts will be in proper sequence, and the correct group and subgroup titles are inserted. Only after the above has been completed, is one in a position to draft the chart or code of accounts with a fair degree of confidence. But, naturally, considerable further study is necessary before the final draft of this chart should be attempted.

ORGANIZATION CHART—USEFULNESS

This chart is of particular value in the assistance obtainable therefrom for making the chart of accounts actually complete, and, perhaps in the original instance, in assisting in the departmental differentiations under each of which will be shown the detail departmental accounts. Take, for example, the large chart given in the last chapter. The assistant comptroller and auditor is in charge of the department of general accounting, and he has under him the heads of the departments of distribution, statistics, pay-rolls, billing, and collections. In turn, he is subservient to the wishes of the comptroller, the box of which in the chart represents the latter's department, and so on.



Form 47: Relation of organization chart to account code.

If this arrangement is lined up properly, for the above, the sequence of departments is:

Comptroller
General Accounting
Distribution
Statistics
Pay-Roll
Billing
Collections

For each of these the chart of accounts must provide adequately for managerial and clerical service accounts, and for the others necessarily related thereto. When preparing and checking the rough draft of the chart of accounts, frequent reference to such an organization graph proves most valuable.

In accord with the same idea, where a mnemonic symbolization code is contemplated, the organization chart may be so constructed as to permit of inclusion therein of the symbols requisite for the so-called "base chart." In constructing such a code, the approach may be made by laying out such a sheet. First, for example, the letters of the alphabet are arranged in a vertical column, from "A" downward, omitting the letters which are not to be used for mnemonic symbol purposes. Then, against this column the broad classifications are fitted, following so far as possible the mnemonic method. Certain letters may be left blank, and these are dropped out, at least for the time being.

Each one of these items, next, is subdivided, which results in a double letter arrangement; then, each of these subdivisions, in turn, is analyzed and further subdivided, and so on. By the time this classification is carried out in detail, even for a simple plant, a small book results; hence, the task is a laborious one, if done conscientiously. The needs of each business must be kept in mind, the principles of good accounting always being uppermost. But when once done correctly, a foundation is prepared for the securing of satisfactory costs.

In order to secure a working idea of the above, and the relation of the organization chart thereto, assume a fairly large industrial. Its fundamental base sheet is as follows:

Indirect Expense:

A	Auxiliary Expense	AC	Protection Group
		AG	Gun Department
		AK	Cartridge Department
		AN	Maintenance Department
		AR	Power Department

		AS	Stores Department
		AT	Tool Department
		AV	Miscellaneous Auxiliary Expense Accounts
B	Business Expense	BB	Factory Business
		BE	Factory Staff
		BV	Miscellaneous Business Expense Accounts
C	Commercial (Selling) Expense	CE	Sales Executives
		CP	Promotion Department
		CS	Selling Department
		CV	Miscellaneous Sales Expense Accounts
D	Direct Expense	DG	Gun Department
		DK	Cartridge Department
		DT	Tool Department
		DV	Miscellaneous Direct Expense Accounts

Deferred Expense:

E Deferred Expense
F Deferred Expense—Special

Work in Process:

G Gun Department Products
H
J
K Cartridge Department Products
L
M Miscellaneous Other Products
N
P
R Salvage Products
S Stores
T Tools
U
V Personal Accounts

Construction:

W Part Construction
X Plant Equipment
Y Land—Buildings—Building Equipment

Based upon the above, the further elaboration as applied to, say, the Sales Department organization may be:

C Sales Department
CEB Sales Executive Offices
CPB Promotion Department Office
CSB Domestic Sales Department Office
CSB Advertising Office
CSE Export Sales Office
CSR Retail Field Division

In order to demonstrate the possible tie-up of the above with the organization chart thereof, a portion of the planning function with departments thereunder is offered in Form 47, on page 210; the organization symbols are included thereon. The Order Department falls under the heading of factory business; hence, the letters BB to show such fact and D to set out the department sequence.

PROBLEM

The Allied Trading Company, a corporation, with a capital stock of $250,000, has the following list of accounts:

1. Cash on Deposit and on Hand
2. Notes Receivable
3. Real Estate and Buildings
4. Furniture and Fixtures
5. Stock of Central Grocers, Incorporated
6. Investments
7. Goods Inventories
8. Freight, Express, Cartage
9. Delivery Equipment
10. Delivery Expense
11. Sundry Floor Expense
12. Insurance
13. Fuel
14. Repairs
15. Taxes
16. Advertising
17. Purchase Discounts
18. Postage
19. Salaries
20. Stationery and Office Supplies
21. Sundry Office Expense
22. Interest Paid
23. Pay-Roll Unpaid
24. Notes Payable

25. Accounts Payable
26. Reserve for Bad Debts
27. Surplus
28. Capital Stock
29. Sales
30. Sales Discounts
31. Interest Earned
32. Sundry Earnings
33. Sundry Other Expenses

The company began some years ago in a small way, and gradually increased its activities until at present it employs some 1,000 persons.

The student, as system accountant, is to secure a loose-leaf notebook and open up a page for each group of accounts which he believes is requisite; each account given above is to be analyzed, such analysis being entered in the notebook; the completed chart of accounts is to be prepared, without explanation as to operation, and some symbol scheme is to be assigned to the completed classification which will permit of future expansion.

The following information has been obtained as to current account practice:

1. Cash on Deposit and on Hand: Two bank accounts; a cashier's change fund; cashier's petty cash.
2. Notes Receivable: Customers' notes, some doubtful of collection; notes are frequently discounted at the bank, and infrequently some of these go to protest; there is a note of the president's on hand.
3. Real Estate and Buildings: Land is all used for operation; there is one brick and concrete building, four stories in height, with elevator service between floors.
4. Furniture and Fixtures: Showroom furniture and fixtures; office furniture and fixtures.
5. Stock of Central Grocers, Incorporated: Some shares of stock of this company are held.
6. Investments: Bond investments.
7. Goods Inventories: Seven separate classes of goods are purchased and sold.
8. Freight, Express, Cartage: Covers both incoming and outgoing shipments: all incoming charges cannot be allocated to specific classes of goods.
9. Delivery Equipment: Consists of a number of light automobile trucks; each has a crew of driver and helper; the

crew of each truck is required to do whatever work is necessary to take care of their machine.

10. Delivery Expense: Wages of drivers and helpers; depreciation on trucks; expense of truck operation and upkeep.
11. Sundry Floor Expense: Wages of janitor and cleaning women; cleaning supplies; repairs to furniture and fixtures; wages of elevator men.
12. Insurance: Building, stock, automobiles, employers' liability, employees' bonding.
13. Fuel: Coal for heating and elevator service; wages of fireman and engineer.
14. Repairs: Building, furniture, and fixtures.
15. Taxes: State, County, federal; licenses.
16. Advertising: Periodicals, brochures, signboards; entertainment of customers; donations and charity.
17. Purchase Discounts: Received on all purchases, and advantage of deductions taken.
18. Postage: Sales and general office.
19. Salaries: Salesmen, office clerks, executives.
20. Stationery and Office Supplies: Sales and general office.
21. Sundry Office Expense: Ice, water, carfares, and so forth.
22. Interest Paid: Notes Payable.
23. Pay-Roll Unpaid: Used yearly at closing time, and covers all employees.
24. Notes Payable: Trade creditors and bank obligations.
25. Accounts Payable: Trade creditors; expense bills.
26. Reserve for Bad Debts: No comment.
27. Surplus: No comment.
28. Capital Stock: All common; authorization amount exceeds that actually issued; some stock issued has been repurchased.
29. Sales: Seven commodities; return sales and allowances.
30. Sales Discounts: Given on all commodities.
31. Interest Earned: Notes receivable; investments; dividends from stock held.
32. Sundry Earnings: Sales of refuse; small unclassified items.
33. Sundry Other Expenses: Collection and exchange; small unclassified items.

XI

CHART OF ACCOUNTS: TRADING *VERSUS* MANUFACTURING

Statement arrangement of accounts. Mercantile accounts *versus* manufacturing accounts. Standard chart of accounts.

BEFORE the student takes up his work on this chapter, it is advised that he review carefully Chapter VI. In attempting to develop a satisfactory chart of accounts for a specific case, considerable difficulty may be experienced due to certain fundamental factors not being thoroughly appreciated. Although others may be mentioned, the following predominate:

1. Two concerns of the same general kind, one larger than the other, will have many accounts similar in nature, and many which are usable in the one case but not in the other.

2. In comparing a mercantile business with a manufacturing enterprise generally, not only will there be considerable difference in the accounts required, as well as some similarity, but the location of particular accounts in the charts will vary greatly even though their titles may be similar; and a change in location requires a change in treatment.

3. In the same business, whether trading or manufacturing, a difference in treatment must be recognized where the perpetual-inventory plan is in operation as against where it is not used.

4. Some industrials carry the factory accounts, say, upon the General Ledger, whereas others allocate them to a Factory Ledger. Again, those carried upon the Factory Ledger may relate entirely to operation, or there may be included upon such Ledger a number of asset accounts which have some connection with the factory, in addition to those related to operation. Such variances as the above require dissimilar treatment.

5. Peculiar circumstances demand special treatment.

In order that the beginner in system work may secure

some semblance of a firm foundation from which to approach particular cases, it is the purpose of this chapter to expand upon the ideas mentioned above. It is to be noticed that the primary interest is centered upon the so-called nominal accounts, those which are reflected in the Profit and Loss Statement. It is in connection with these that the major difficulties are encountered, rather than with those related to the Balance Sheet.

Perhaps the experienced accountant who reads this chapter will come to the conclusion that the writer advocates the use of a standardized chart or hand-book of accounts from which selections shall be made when on a given case. That, however, is not the situation; under certain circumstances, it may be possible to pick out a certain list of accounts from an all-inclusive group and secure a satisfactory result, but the opposite more often is apt to happen. The experienced accountant, who is responsible for the adequate solution of a case which has been assigned to him, will approach his problem with an open mind—perhaps it might be said that he will have nothing more formidable with him at the outset than a notebook filled with a fresh supply of blank leaves. On the other hand, it cannot be expected that the beginner can proceed with the solution of a given problem in this manner. Therefore, although standardized charts are not advocated for the experienced person, considerable value may be secured therefrom by the student; hence, the arrangement of the material in this chapter along lines somewhat standard in character.

STATEMENT ARRANGEMENT OF ACCOUNTS

Whatever may be the arrangement or grouping of the accounts upon the statements, this should adhere closely to that followed in the chart of accounts. For illustrative purposes, the accounts upon the Balance Sheet may be arranged and classified as follows:

Assets:	
Current Assets:	In realization order
Deferred Charges:	In order of importance
Fixed Assets:	In order of importance
Intangible Assets:	In order of importance
Liabilities (and Capital):	
Current Liabilities:	In order of liquidation
Fixed Liabilities	
Capital	

Some accountants place the deferred charges at the end of the assets group; some commence the listing with the fixed assets items, in which event the fixed obligations are stated first, as well; some, in the case of a corporation, where the fixed items are entered first, split the capital group so as to head the liability side with capital stock, and leave the surplus at the end.

Likewise, for illustrative purposes, the accounts upon the Profit and Loss Statement may be arranged and grouped as follows:

Net Sales
Cost of Sales
Gross Profit
Expenses of Operation
Net Profit from Operation
Financial (other) Income
Financial (other) Expenses
Net Profit for the Period

The above two arrangements are shown graphically by Form 48, the layout provided being framed for both a mercantile and a manufacturing establishment.

MERCANTILE ACCOUNTS VERSUS MANUFACTURING ACCOUNTS

The chart of accounts for a non-cost system factory, broadly speaking, is substantially similar to that for a trading enterprise, except for the group of accounts related to

account order of arrangement for statement purposes.

the actual factory operations. Although the trader, technically, has no manufacturing cost, since he merely buys and sells goods, nevertheless his purchase cost may be said to correspond roughly to the industrial's cost of manufacture; this similarity (and dissimilarity) is demonstrated by the following simple comparison:

Mercantile	Manufacturing
Purchase Cost	Manufacturing Cost
Selling Expense	Selling Expense
Administrative Expense	Administrative Expense
Financial Expense	Financial Expense
Sales Deductions	Sales Deductions

The trader's cost of purchasing is composed of such items as:

Purchases
Purchase Returns
Purchase Allowances
In-Freight and Cartage
Purchasing Department Expense

And when the result of the above has been adjusted to the beginning and ending inventories, the cost of sales is secured.

On the other hand, manufacturing cost determination requires considerably more elaboration in respect of account elements; this is shown by the simple summary given below and continued on the following page:

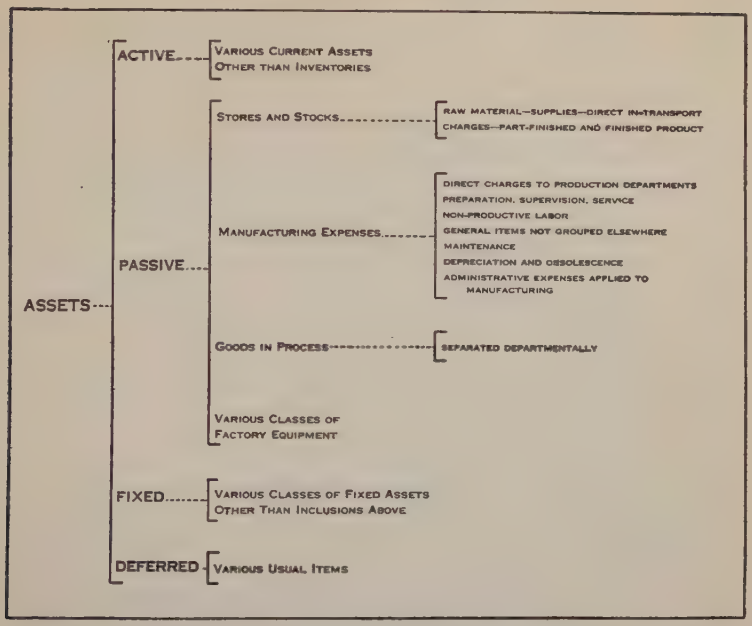
Prime Cost
  Materials and Supplies Consumed
  In-Freight and Cartage
  Direct Labor

Manufacturing Overhead
  Indirect Labor
    Foremen
    Helpers
    Porters
    Messengers
    Watchmen
    And so forth—not working directly upon product

General Factory Expense
Heat—Light—Power
Shop Supplies Consumed
Repairs
Factory Office Supplies Consumed
Factory Office Expenses
Salaries
Factory Superintendent
Factory Clerks
Depreciation
On various factory assets subject thereto

When the above have been adjusted to the beginning and ending inventories of work in process, the resultant amount represents cost of manufacture. And when the cost of manufacture has been adjusted by the beginning and ending inventories of finished product, the cost of sales is secured. The above presentation contemplates the operation of a perpetual-inventory system, the latter being absolutely necessary to have a well-managed factory.

The perpetual-inventory factor demands that the factory costs and expenses be viewed somewhat differently from the situation where the perpetual-inventory plan is not in operation, even though the chart arrangement of the various factory cost and expense accounts may not be radically dissimilar under both possibilities. Since factory costs and expenses represent expenditures to be allocated eventually to the inventories of goods in process and finished product, these expenditures create assets—real elements—rather than requiring treatment as nominal items. Hence, although the chart inclusion may not be as assets, the practical operation of the accounting procedures must so consider them. As commodities come out of process, a clearing therefrom is necessary either to Part Finished Product Inventory account or to Finished Product Inventory account, and as disposal is made of any of these two classes of product (both of which frequently are known as finished product) the recorded cost thereof must be cleared into the account or accounts representing cost of sales; these latter are



Form 49: Chart showing creation of assets from revenue expenditures.

purely nominal in character. This crystallization of factory expenditures related to operation into inventories rather than into profit and loss elements is noticed in Form 49.

In order to illustrate further the similarities and differences between a chart of accounts for a mercantile business and one for a manufacturing concern, let it be assumed that it is possible to secure a representative chart of accounts for a trading establishment, and that at a later date another chart is obtained after this organization has changed its character so that it now fabricates the commodities it sells, still retaining, however, as much of its former differentiations as possible. A comparison of the two complete charts discloses the fact that the manufacturing business requires: (1) Plant accounts; (2) Production accounts; (3) Manufacturing Expense accounts; which were unnecessary when the concern was entirely mercantile in character. Further, certain accounts common to both

charts are found in a different location in one than in the other, this being caused by the changes mentioned above.

Inasmuch as the Profit and Loss group of accounts causes the systematizer more trouble and worry than does the Balance Sheet group, the attention is directed again to the former in order to crystallize more definitely the principles raised in the last paragraph. For this purpose, the following summary groupings are used:

1. Operation Income
2. Operation Costs
3. Manufacturing Expenses
4. Selling Expenses
5. Administrative Expenses
6. Other Income
7. Other Expense

These summary groupings are divided to a fair degree in the following diagram. The accounts for a manufacturing business are set out to the right of those related to a trading enterprise. Whenever an account is not similar, reading from left to right, or vice versa, a blank space appears.

OPERATION INCOME

TRADING	MANUFACTURING
Sales (by departments)	Sales—Finished Product (by classes)
	Sales—Part Finished Product
	Sales—Manufacturing Material
Sales—Sundry	Sales—Sundry

OPERATION COSTS

Merchandise Purchases (depts.)	Material Purchases
	Direct Labor
	Manufacturing Expense—Control
	Cost of Manufacture
Cost of Sales (by departments)	Cost of Sales (by classes)
Selling Expenses—Control	Selling Expenses—Control
Administrative Expenses—Control	Administrative Expense—Control

MANUFACTURING EXPENSES

	SALARIES
(None)	Superintendent and Foremen
	Designers and Draftsmen
	Pattern Makers
	Storekeepers
	Factory Accounting Office

MANUFACTURING EXPENSES (*Continued*)

WAGES

Inspectors
Tool Makers
Millwrights
Carpenters
Painters
Truckers
Cleaners
Sundry Indirect Labor

POWER—HEAT—LIGHT

Labor
Fuel
Current
Gas
Supplies

REPAIRS—MAINTENANCE

Grounds
Buildings and Attached Fixtures
Power Plant
Machinery—Machine Tools
Factory Fixtures
Patterns
Hand Tools
Shop Equipment
Factory Office Furniture and Fixtures
Yard Equipment

STABLE EXPENSES

Wages—Drivers'
Stable Supplies—Expenses
Feed—Bedding
Repairs—Stable Equipment
Depreciation—Stable Equipment
Insurance—Fire and Liability
Stable Expenses—Diffusion

GARAGE EXPENSES

Wages—Chauffeurs'
Garage Supplies—Expenses
Repairs—Autos
Depreciation—Autos
Insurance—Fire and Liability
Garage Expenses—Diffusion

GENERAL

Rent—Factory Portion
Taxes—Plant and Stock
Insurance—Fire—Plant and Stock
Factory Supplies Consumed
Oil—Waste—Packing

Manufacturing Expenses (*Continued*)

	Water
	Experimental Work
	Lost Time
	Material Spoiled or Scrapped
	Replacement of Defective Material
	Repairs to Factory Stock
	Intransport Charges—Undistributed
	Telephone—Telegraph
	Stationery—Printing—Office Supplies
	Drafting Supplies
	Sundry Factory Expense
	Depreciation (by plant accounts)
	Administrative Expense—Factory Portion
	Patents Written Off

Selling Expenses

Salaries—Traveling Salesmen	Salaries—Traveling Salesmen
Commissions—Traveling Salesmen	Commissions—Traveling Salesmen
Expenses—Traveling Salesmen	Expenses—Traveling Salesmen
Indemnity Bonds—Traveling Salesmen	Indemnity Bonds—Traveling Salesmen
Salaries—Sales Clerks'	Salaries—Sales Clerks'
Entertainment—Customers'	Entertainment—Customers'
Advertising	Advertising
Free Replacements—Merchandise	Free Replacements—Merchandise
Freight and Cartage Outward	Freight and Cartage Outward
Credit Department Expense	Credit Department Expense
Salaries—Sales Office	Salaries—Sales Office
Rent—Sales Portion	Rent—Sales Portion
Heat—Light—Sales Portion	Heat—Light—Sales Portion
Stationery—Printing—Supplies	Stationery—Printing—Supplies
Postage	Postage
Telephone—Telegraph	Telephone—Telegraph
Commercial Agency Subscriptions	Commercial Agency Subscriptions
Depreciation	Depreciation
Repairs	Repairs
Insurance	Insurance
	Stable—Garage Expenses—Sales Portion for Outshipments
Shipping Labor	Shipping Labor
Shipping Supplies and Expense	Shipping Supplies and Expenses
Incidentals	Incidentals
Administrative Expense—Sales Portion	Administrative Expense—Sales Portion
Elevator Wages and Expense	
Insurance—Liability	
Insurance—Fire (Stock—Buildings—Fixtures)	
Taxes (Stock—Buildings—Fixtures)	

Selling Expenses (*Continued*)

Repairs—Store Furniture and Fixtures
Repairs—Buildings and Attached Fixtures
Alterations Written Off
Departmental Supplies
Water and Ice

STABLE EXPENSES

Wages—Drivers'
Stable Supplies—Expenses
Feed-Bedding
Repairs—Stable Equipment
Depreciation—Stable Equipment
Insurance—Fire—Liability
Stable Expenses—Diffusion

GARAGE EXPENSES

Wages—Chauffeurs'
Garage Supplies—Expenses
Repairs—Autos
Depreciation—Autos
Insurance—Fire—Liability
Garage Expenses—Diffusion

Administrative Expenses

Salaries—Officers'
Expenses—Officers'
Directors—Fees—Expenses
Traveling Expenses
Indemnity Bonds
Salaries—General Office
Rent—Administrative Portion
Heat—Light—Administrative Portion
Stationery—Printing—Supplies
Postage
Telephone—Telegraph
Depreciation
Repairs
Insurance
Charities—Donations
Taxes—State—Federal
Legal Expense
Incidentals
Administrative Expense—Diffusion
Stable—Auto Expense—Part on Incoming Goods
Intransport Charges—Undistributed
Patents Written Off

Salaries—Officers'
Expenses—Officers'
Directors—Fees—Expenses
Traveling Expenses
Indemnity Bonds
Salaries—General Office
Rent—Administrative Portion
Heat—Light—Administrative Portion
Stationery—Printing—Supplies
Postage
Telephone—Telegraph
Depreciation
Repairs
Insurance
Charities—Donations
Taxes—State—Federal
Legal Expense
Incidentals
Administrative Expense—Diffusion

Other Income	
Cash Over	Cash Over
Cash Discounts Earned	Cash Discounts Earned
Interest Earned	Interest Earned
Bond Premium	Bond Premium

Other Expense	
Cash Short	Cash Short
Cash Discounts Allowed	Cash Discounts Allowed
Interest on Items Payable	Interest on Items Payable
Bad Debts	Bad Debts
Organization Expense Written Off	Organization Expense Written Off
Bond Discount	Bond Discount

STANDARDIZED CHART OF ACCOUNTS

No doubt exists but that the best service is given when a new situation is approached with an open mind, rather than with one backed up by some sort of a standardized account notebook. Nevertheless, for illustrative purposes, a standard chart should prove of considerable worth and, at times, even may be used as a guide of fairly uniform applicability in businesses of a general type which vary in size only. Again, such a development permits the system student to have available something tangible to which to refer when working out certain assigned exercises. The remaining portion of this chapter attempts to illustrate such a code. But inasmuch as the Balance Sheet accounts do not cause much difficulty, a complete development of such a chart seems unnecessary. Therefore, it is proposed to discuss merely that part of a standard code of accounts which concerns the nominal elements.

The summary groupings for this chart are as follows:

B—Balance Sheet
L—Loss and Gain (Profit and Loss)

The first elaboration of each of the above is as below:

B Balance Sheet
- BA Current Assets
- BB Fixed Assets
- BL Current Liabilities
- BM Fixed Liabilities

LOSS AND GAIN	GROUP LETTER	
CODE		

ACCOUNT NUMBER	LC SALES	LK COST OF SALES	LM MANUFACTURING COST	LE MANUFACTURING EXPENSES	LS SELLING EXPENSES	LA ADMINISTRATIVE EXPENSES	LP OTHER INCOME	LR OTHER EXPENSES
1	A GOODS BY	A GOODS BY						
2	B GOODS PRODUCT	B GOODS PRODUCT						
3	C GOODS CLASSES	C GOODS CLASSES						
11			DIRECT LABOR	INDIRECT LABOR				
12			MATERIALS CONSUMED					
13			MANUFACTURING EXPENSE CONTROL					
15					EXECUTIVE SALARIES	EXECUTIVE SALARIES		
16					SALESMEN'S SALARIES AND COMMISSIONS			
18					SALARIES—WAGES	SALARIES—WAGES		
21					YARD LABOR			
23				RENT	RENT	RENT		
27				HEAT—LIGHT—POWER—WATER	HEAT—LIGHT—POWER WATER	HEAT—LIGHT—POWER—WATER		
30				INSURANCE	INSURANCE	INSURANCE		
31					ADVERTISING	ADVERTISING		
34				TELEPHONE—TELEGRAPH	TELEPHONE—TELEGRAPH	TELEPHONE—TELEGRAPH		
35				TAXES—STATE AND COUNTY	TAXES—STATE AND COUNTY	TAXES—STATE AND COUNTY		
36						TAXES—FEDERAL		
37					POSTAGE	POSTAGE		
38				SUPPLIES	SUPPLIES	SUPPLIES		
42				REPAIRS	REPAIRS	REPAIRS		
46				FREIGHT—DRAYAGE	FREIGHT- DRAYAGE	FREIGHT—DRAYAGE		
48				TRAVELING EXPENSE	TRAVELING EXPENSE	TRAVELING EXPENSE		
49				LEGAL EXPENSE	LEGAL EXPENSE	LEGAL EXPENSE		
51					EXTRA CARRYING EXPENSE			
52					SUNDRY YARD EXPENSE			
53						CHARITIES—DONATIONS		
54					ENTERTAINMENT	ENTERTAINMENT		
56				DEPRECIATION	DEPRECIATION	DEPRECIATION		
66						CUSTOMERS' GUARANTY SERVICE		
68					COMMISSIONS			
69						SHRINKAGE—DEGRADATION		
75				SUNDRY MANUFACTURING EXPENSES	SUNDRY SELLING EXPENSES	SUNDRY ADMINISTRATIVE EXPENSE		
80							CASH OVER	CASH SHORT
81							DISCOUNT ON PURCHASE	DISCOUNT ON SALES
82							INTEREST INCOME	INTEREST EXPENSE
85								BAD DEBTS

BK Capital
L Loss and Gain
LC Sales
LK Cost of Sales
LM Manufacturing Cost
LE Manufacturing Expenses
LS Selling Expenses
LA Administrative Expenses
LP Other Income
LR Other Expenses

The further subdivision of the "L" group of accounts is indicated by what follows. Herein, also, is shown the treatment of each account. The Loss and Gain Code covering the description of the accounts is shown in Form 50. It should be mentioned that this next treatment does not present the same accounts in the entirety found in the schedules above displayed.

LC1—LC10. *Sales Accounts.* These are classified in accordance with the requirements of each case. In a manufacturing business, they relate to finished product, whereas in a mercantile establishment they concern the merchandise; a separate Sales account is maintained for each product or for each department. In either instance, the following explanation applies:

DEBIT: at the close of each month, with the total of merchandise returned by customers at sales price, and with allowances made to customers, *crediting* Accounts Receivable.

CREDIT: at the close of each month, with the total of sales made.

BALANCE: of each account, after making entries as above, should represent net sales of each class, to be transferred to Profit and Loss at the close of the fiscal period.

LK1—LK10. *Cost of sales.* One account should be kept for each class of sales. In a mercantile business, cost of sales consists of the sum of such cost as related to each sale made, or is based as a percentage of sales:

1. In certain departments, it is a comparatively easy matter to cost each sale, as in a cloak and suit department, or in a furniture department.
2. In certain departments, the costing of each sale, as a practical matter, is impossible; this would be true in the case of a notion department. Hereunder, the cost of sales is arrived at on a percentage basis—as, say, 55% of the department sales for a given period. This percentage may be used in costing the total monthly sales of such department, subject to adjustment at closing dates because of the taking of a physical inventory.

On the other hand, the cost of sales accounts in a manufacturing business generally cannot be prepared unless some sort of a cost accounting system is maintained, in order to secure the total manufacturing cost of each item sold. In either event, the following account components are noticed:

DEBIT: at the close of each month with the total cost of sales for the month, *crediting* the correct Merchandise or Product Inventory account.

CREDIT: at the close of each month with the total cost of merchandise or product returned by customers during the month, *debiting* the correct Merchandise or Product Inventory account.

BALANCE: in each Cost of Sales account should represent the net cost of that class of sales, to be transferred to Profit and Loss at the close of the fiscal period.

LM—Manufacturing Cost

LM11. *Direct Labor.* This account includes only the labor charges which are consumed directly on product—as against specific order or process numbers under operation of a cost system. All other labor charges are indirect in character, and are chargeable to the account of Indirect Labor. Account components are:

DEBIT: at the end of each pay-roll period with the total amount of direct labor, *crediting* Cash or Wages Accrued.

BALANCE: represents labor cost that is directly allocatable to

manufacturing operations, and is to be transferred to Work in Process, Finished Product, or Cost of Sales, in accord with the method of handling these accounts.

LM12. *Materials Consumed.* This account holds the net cost of materials used during each month. Account components are:

DEBIT: at the end of each month with the total of materials taken from stores during such month for use in manufacturing, *crediting* Raw Materials (Stores) or Manufacturing Materials. The amount of the above debit results from the application of some system related to requisitioning material, or to one based upon monthly physical inventories.

CREDIT: at the end of each month with the total of materials returned to stores, these previously having been debited to this account.

BALANCE: represents net materials cost related to the month's manufacturing, and monthly it is to be transferred to Work in Process, Finished Product, or Cost of Sales, in accord with the method of handling these accounts.

LM13. *Manufacturing Expense Control.* This account displays in summary form the various manufacturing expenses. Account components are:

DEBIT: at the end of each month, with balances of the various manufacturing expense accounts (group LE), *crediting* these expense accounts with the respective amounts of transferred balances.

BALANCE: is to be transferred to the accounts of work in process, Finished Product, or Cost of Sales.

The above three accounts represent the manufacturing cost elements, and are closed out monthly to one of the three accounts of Work in Process, Finished Product, or Cost of Sales, depending upon what sort of product is fabricated. In the case of the usual factory which has unfinished work on hand at the end of each month, the accounts of Direct Labor, Materials Consumed, and Manu-

facturing Expense would be closed into the account of Work in Process, this latter already holding the amount of the work in process inventory as at the first of the month. Then there would be transferred from Work in Process to Finished Product all the cost of the goods completed during the month; the balance remaining in Work in Process now should represent the cost value of unfinished product. The Cost of Sales next would be transferred from the Finished Product account, these amounts being secured through the particular cost system in use—as specific order or process system.

In the event where the finished product deteriorates rapidly, as certain kinds of candy or baked goods, the Work in Process account is unnecessary, the manufacturing costs being sent direct to Cost of Sales. Further, where there is practically no work remaining in process, the manufacturing costs may be closed direct to Finished Product, after which the amount representing the cost of sales is credited thereto.

The cost of sales is securable from the specific order Cost Sheet, or through the use of a unit cost figure based upon past results, or through the use of a percentage estimate based upon net sales and grounded in past experience.

In the event of the operation of a cost system, the account of Work in Process may be considered as the controlling account of the Cost Ledger. Hereunder, the method illustrated at the commencement of the second paragraph above is used.

LE—Manufacturing Expenses

LE11. *Indirect Labor.* The components of this account are:

DEBIT: all indirect labor charges hereto which are not allocatable to Direct Labor account, or to any other, *crediting* the account of Wages Accrued or Cash as the case may be.

BALANCE: is transferrable monthly to account LM3—Manufacturing Expense.

LE23. *Rent.* If the factory and general office are located in the same building, then the rental charge should be proportioned to each upon the basis of floor space or upon the value of the floor space. The account components are:

DEBIT: the portion of the rent hereto that is applicable to the Manufacturing Department, *crediting* Vouchers Payable, Accounts Payable, or Cash.

CREDIT: this account with all income the result of subrentals of portions of shop or factory.

BALANCE: is transferrable monthly to account LM3—Manufacturing Expense.

The title of the account will vary, perhaps, and there may be even more than one such account.

LE27. *Heat—Light—Power—Water.* The Components are as follows:

DEBIT: monthly with the total cost of labor, material, and so forth, incurred on account of the above items.

BALANCE: is transferred monthly to account LM3—Manufacturing Expenses.

This account may be separated into two or more, dependent upon circumstances. Where a Power account is operated by itself, the components are:

DEBIT: monthly with total cost of power produced or purchased, *crediting* Vouchers Payable, Accounts Payable, or Cash.

BALANCE: is transferred monthly to account LM3—Manufacturing Expense.

LE30. *Insurance.* The components are:

DEBIT: monthly with 1/12 of the annual fire and liability insurance cost, *crediting* the current asset of Unexpired Insurance.

BALANCE: represents monthly cost of insurance applicable to such period, and is to be transferred to account LM3—Manufacturing Expense.

This account may be replaced by two, one for each type

of insurance, and in this event the above treatment still holds.

LE34. *Telephone and Telegraph.* The cost of all telephone and telegraph service related to the factory should be included herein. The account components are:

DEBIT: this account with all telephone toll and telegraph message invoices, *crediting* Vouchers Payable, Accounts Payable, or Cash.

BALANCE: represents monthly amount to be transferred to account LM3—Manufacturing Expense.

LE35. *Taxes—State and County.* The account components are:

DEBIT: this account at close of each month with the State and County taxes applicable thereto, *crediting* Taxes Accrued.

BALANCE: represents tax cost applicable to the period, to be transferred at closing to account LM3—Manufacturing Expense.

This account may be titled otherwise than as above so long as its function is not changed.

LE38. *Supplies.* The components of this account are:

DEBIT: hereto the cost of miscellaneous factory supplies which are not chargeable to any other manufacturing expense account.

BALANCE: represents the amount that is to be transferred at closing time to the account LM3—Manufacturing Expense.

LE42. *Repairs.* This account should show the cost of all repairs, including labor and materials used. The account components are:

DEBIT: with all invoices covering materials hereunder used, labor consumed and any other items which may come under this head properly.

BALANCE: at closing periods, is transferred to account LM3—Manufacturing Expense.

Dependent upon circumstances, this account may be re-

placed by a number of repair accounts, as: Repairs on Buildings, Repairs on Machinery, and so forth.

LE46. *Freight and Drayage.* This account should hold all delivery expenses incurred on account of factory supplies: The components are:

DEBIT: with all freight and drayage bills resulting from delivery of supplies to factory.

BALANCE: at closing periods, is transferred to account LM3—Manufacturing Expense.

This account may be variously titled, as Transportation Expense; at times, more than one account may be used.

LE48. *Traveling Expense.* This account relates only to the factory, holding such expenses as are incurred in the purchase of factory supplies or equipment. The components are:

DEBIT: for all funds expended for traveling related to plant operation.

BALANCE: at closing periods, is transferred to account LM3—Manufacturing Expense.

LE49. *Legal Expense.* This account relates only to the factory, holding such legal expenses—attorney's fees, and so forth—as are concerned with production. The components are:

DEBIT: for all legal expenses related to production, paid or incurred.

BALANCE: at closing periods, is transferred to account LM3—Manufacturing Expense.

LE56. *Depreciation.* This account is charged with amounts which are offset by credits to the account of Reserve (or Allowance) for Depreciation which is related to all factory fixed assets (exclusive of land) that are subject to depreciation. The components are:

DEBIT: monthly with the depreciation allowance on factory assets, *crediting* the related Reserve (or Allowance) for Depreciation.

BALANCE: at closing periods is transferred to account LM3—Manufacturing Expense.

Naturally, it is of frequent occurrence to utilize more than one Depreciation account, as: Depreciation on Buildings, Depreciation on Factory Fixtures, Depreciation on Machinery, and so forth; each one of these has its related reserve account, and the accounts are all handled as above suggested.

LE75. *Sundry Manufacturing Expense.* This account holds items of manufacturing expense for which other accounts are not found. Its balance is periodically transferred to account LM3—Manufacturing Expense.

LS—Selling Expenses

LS15. *Executive Salaries.* In this account are recorded the salaries of proprietors or officers considered as selling expense. The account components are:

DEBIT: when each pay-roll is prepared, with the salaries of proprietor, partners, manager, or officers, *crediting* Cash or Wages and Salaries Accrued.

BALANCE: at closing periods is transferred to Profit and Loss.

Variations in nomenclature may be encountered depending upon the case in hand.

LS16. *Salesmen's Salaries and Commissions.* The account components are:

DEBIT: all salaries and commissions hereto which have been paid to the salespeople.

BALANCE: at closing periods is transferred to Profit and Loss.

At times, there may be one account with salaries and another with commissions.

LS18. *Salaries and Wages.* The account components are:

DEBIT: all wages hereto which have been paid sales department office clerks, drivers of wagons and autos.

BALANCE: at closing periods is transferred to Profit and Loss.

A separation may be made hereunder so that a separate account will hold the wages paid sales department office clerks, another will hold wages of drivers of wagons, and another the wages of chauffeurs. Frequently, the wages of drivers and chauffeurs are merged in one account.

LS21. *Yard Labor.* The account components are:

DEBIT: all wages hereto paid yard laborers for unloading cars, loading wagons and trucks, and so forth.

BALANCE: at closing periods is transferred to Profit and Loss.

Frequently, unloading labor is kept separate from general yard labor, as may be the situation in a coal yard.

LS23. *Rent.* The account components are:

DEBIT: with portion of rent applicable to sales, *crediting* Cash, Vouchers Payable, or Accounts Payable.

BALANCE: at closing periods is transferred to Profit and Loss.

This account may be subdivided as desired.

LS27. *Heat—Light—Power—Water.* The account components are:

DEBIT: with cost of all expenses of sales department relative to the above elements.

BALANCE: at closing periods is transferred to Profit and Loss.

LS30. *Insurance.* Account components are:

DEBIT: with total insurance cost related to sales equipment and to sales employees, *crediting* Cash, Vouchers Payable, or Accounts Payable.

BALANCE: at closing periods is transferred to Profit and Loss.

LS31. *Advertising.* Account components are:

DEBIT: with all advertising expenses incurred in selling company products; help wanted advertising expense is an administrative item.

BALANCE: at closing periods is transferred to Profit and Loss.

At times, a splitting of this account may occur, as: Advertising—Periodicals; Advertising—Bill-Boards; and so forth.

LS34. *Telephone and Telegraph.* The account components are:

DEBIT: with all telephone and telegraph expenses incurred in sales.

BALANCE: at closing periods is transferred to Profit and Loss.

LS35. *Taxes—State and County.* The account components are:

DEBIT: for all taxes paid to state and county officers which relate to the sales department, *crediting* Taxes Accrued. County taxes never are paid in advance.

BALANCE: at closing periods is transferred to Profit and Loss.

LS37. *Postage.* Account components are:

DEBIT: all postage expense hereto which is related to the sales department.

BALANCE: at closing periods is transferred to Profit and Loss.

LS38. *Supplies.* Account components are:

DEBIT: all expenses hereto which seem applicable under this heading, and which are related to the sales department.

BALANCE: at closing periods is transferred to Profit and Loss.

This account may be designated by titles different from the above; at times a separation thereof will be made into two or more of them.

LS42. *Repairs.* This account should show the cost of all repair expenses related to the sales department. Its components are:

DEBIT: all expenses hereto as properly come under this classification.

BALANCE: at closing periods is transferred to Profit and Loss.

The account may be replaced by a number of repair accounts dependent upon circumstances, as on sales equipment, on store equipment, on yard equipment, delivery equipment, and so forth.

LS46. *Freight and Drayage.* The components are:

DEBIT: with all freight and drayage bills resulting from the delivery of materials used in the sales department.

BALANCE: at closing periods is transferred to Profit and Loss.

LS48. *Traveling Expense.* Account components are:

DEBIT: with all funds expended for traveling of salesmen, sales executives, and others connected with the sales department.

BALANCE: at closing periods is transferred to Profit and Loss.

LS49. *Legal Expense.* The components are:

DEBIT: with all attorney's fees and other legal expenses incurred in connection with the sales department.

BALANCE: at closing periods is transferred to Profit and Loss.

LS51. *Extra Carrying Expense.* Account components are:

DEBIT: with all expenses incurred in securing extra help during rush periods (more particularly in a coal yard).

BALANCE: at closing periods is transferred to Profit and Loss.

LS52. *Sundry Yard Expense.* Account components are:

DEBIT: with all yard expenses not allocatable to some one of the other accounts related to the yard (frequently, coal yard).

BALANCE: at closing periods is transferred to Profit and Loss.

LS54. *Entertainment.* Account components are:

DEBIT: with all yard expenses not allocatable to some one of sales department or others closely in touch therewith.

BALANCE: at closing periods is transferred to Profit and Loss.

LS56. *Depreciation.* Account components are:

DEBIT: monthly with the depreciation allowance on sales department assets, *crediting* the related Reserve (or Allowance) for Depreciation.

BALANCE: at closing periods is transferred to Profit and Loss.

More than one Depreciation account may be utilized as circumstances justify.

LS68. *Commissions.* Account components are:

DEBIT: monthly for all sales commissions not provided for elsewhere—as commissions to sales clerks and to manager.

BALANCE: at closing periods is transferred to Profit and Loss.

A separate account may be used in connection with sales clerks' commissions and another for manager's commissions.

LS75. *Sundry Sales Expense.* This account holds items of selling expense for which other accounts are not found. Its balance is periodically transferred to Profit and Loss.

LA—Administrative Expenses

The handling of a considerable number of the accounts in this group related to the administrative side of business is so essentially similar to that accorded the accounts of a like title found under the LS group (Selling Expense), that it seems unnecessary to consume the space needed to discuss them; these accounts are as follows:

LA15. Executive Salaries
LA18. Salaries—Wages
LA23. Rent
LA27. Heat—Light—Power—Water
LA30. Insurance
LA31. Advertising
LA34. Telephone—Telegraph
LA35. Taxes—State and County.
LA37. Postage
LA38. Supplies
LA42. Repairs
LA46. Freight—Drayage
LA48. Traveling Expenses
LA49. Legal Expense
LA54. Entertainment
LA56. Depreciation
LA75. Sundry Administrative Expense

The above accounts having been eliminated from the present discussion, those which remain, and concerning which comment is made, are as follows:

LA36. Taxes—Federal
LA53. Charities—Donations
LA66. Customers' Guaranty Service
LA69. Shrinkage—Degradation

LA36. *Taxes—Federal.* The account components are:

DEBIT: monthly with the estimated accrued unpaid amount which can only be specifically determined at the end of each year, at which time an adjustment is necessary so that it will display the correct amount of whatever Federal taxes are chargeable against the business. Its treatment is similar to that for account LA35.

BALANCE: at closing periods is to be transferred to Profit and Loss.

This account frequently is found under Other Expenses —group LP. Again, it may be treated as profit appropriation.

LA53. *Charities—Donations.* The account components are:

DEBIT: with all expenditures made to religious, educational, and benevolent institutions which are purely charitable in character. Advertising expenses are not chargeable hereto.

BALANCE: at closing periods is to be transferred to Profit and Loss.

LA66. *Customers' Guaranty Service.* The account components are:

DEBIT: with all expenses incurred in repairing goods or products which have been sold to customers and which require such expenditure.

BALANCE: at closing periods is transferred to Profit and Loss.

LA69. *Shrinkage—Degradation.* The account is usable primarily in a coal business. Its components are:

DEBIT: with loss estimated due to the crumbling or degrading of the different grades of bituminous coal.

BALANCE: at closing periods is to be transferred to Profit and Loss.

LP Other Income

LP80. *Cash Over.* This account holds the total income due to errors in making change. The account components are:

CREDIT: with all cash overages that cannot be accounted for in balancing the cash, *debiting* Cash.

BALANCE: is an item of other income, to be transferred to Profit and Loss at the close of the fiscal period.

LP81. *Discount on Purchases.* This account holds the total income earned through the securement of cash discounts; trade discounts are not to be considered. The components are:

CREDIT: at the close of each month with total taken during such month, *debiting* Accounts Payable.

BALANCE: is an item of other income to be transferred to Profit and Loss at the close of the fiscal period.

LP82. *Interest Income.* This account holds the interest earned on receivable items—notes and open accounts—which draw interest. If the account of Accrued Interest on Notes Receivable is carried, the handling of the Interest Income account is as under:

CREDIT: at the close of each month with the interest belonging to that month, whether paid or not, *debiting* the asset account of Accrued Interest on Notes Receivable, when not received in advance. If the interest has been received in advance, the above credit should be to the liability account of Interest Accrued.

BALANCE: is an item of other income to be transferred to Profit and Loss at the close of each fiscal period.

If the interest income (earned) item is small in amount, the entry covering each receipt should be made direct to the Interest Income account, *debiting* Cash. Frequently, it will be sufficient to use but one account instead of the two—LP81, LP82.

LR—Other Expenses

LR80. *Cash Short.* This account holds the total loss due to errors in the cash. The components are:

DEBIT: with all cash shortages that cannot be accounted for in balancing the cash, *crediting* Cash.

BALANCE: is an item of other expenses to be transferred to Profit and Loss at the close of the fiscal period.

LR81. *Discount on Sales.* This account holds the total cash discounts taken by, and allowed to, customers on "on account" payments made by them; trade discounts are not to be considered. The components are:

DEBIT: at the close of each month with total allowed during such month, *crediting* Accounts Receivable.

BALANCE: is an item of other expenses to be transferred to Profit and Loss at the close of the fiscal period.

LR82. *Interest Expense.* This account holds the interest on payable items—notes, mortgages, bonds, and open accounts—which draw interest. The components are:

DEBIT: at the close of each month with the interest belonging to that month, *crediting* Interest Accrued on Payables, if the interest is not paid in advance; if paid in advance, the credit is to Prepaid Interest account.

BALANCE: is an item of other expenses to be transferred to Profit and Loss at the close of the fiscal period.

When this interest actually is paid, the offsetting *debit* must be either to the Accrued or the Prepaid account. If the interest expense (on items payable) is small in amount, the entry covering each payment may be made direct to the Interest Expense account, no accrual entries being necessary. Frequently, it will be sufficient to use but one account instead of two—LR81—LR82. Again, the account of Interest Expense may be subdivided so that a separate one is in evidence for each element mentioned—notes, bonds, mortgages, open accounts.

LR85. *Bad debts.* The components of this account are:

DEBIT: with the estimated amount at the close of each fiscal period necessary to bring the Balance Sheet account of Reserve for Bad Debts to its presumed correct amount, *crediting* Reserve (or allowance) for Bad Debts.

BALANCE: at closing periods is transferred to Profit and Loss as an "other expenses" item.

As each uncollectable customer's account is determined, its amount is to be charged to the Reserve, the offsetting credit being to the particular customer's account.

PROBLEMS

(*a*) Develop a chart of accounts for a representative manufacturing business, proceeding as follows:

(1) Utilize whatever accounts from the Profit and Loss Group (standard chart in chapter) appear desirable. As to these, *do not* include a presentation of functions—debits, credits, balance.

(2) Have the Balance Sheet group conform, as necessary, to the Profit and Loss group agreed upon. As to these accounts, include a presentation of functions of each account selected—debits, credits, balance—in a manner similar to that given in the chapter.

(*b*) Charles Storey who has been in the retail furniture business for two years, requested you to install a system for him. The preliminaries have been completed by you, the hire contract signed, and the system blocked out. It is necessary now for you to install it, and to keep it running for a period of one year.

As of June 1, you have investigated the business without, however, making a complete audit, with the idea of verifying with reasonable accuracy the Balance Sheet figures as of this date. The Balance Sheet of June 1 is as under:

Cash	$ 267	Notes Payable	$ 1,500
Notes Receivable	610	Accounts Payable	3,602
Accounts Receivable	4,100	Chas. Storey, Capital January 1, 1925	12,000
Stock Inventory	4,900	Profit and Loss from 1/1 to 5/31/25	2,150
Equipment	3,375		
Buildings	4,000		
Land	2,000		
	$19,252		$19,252

The information secured by you is as under:

(1) No petty cash fund is operated. Deposited in the Syra-

cuse Trust Company, $205; on hand in drawer, $54. Remaining amount unaccounted for, no information being available thereon. Petty cash fund to be established.

(2) A sight draft was drawn by Storey upon a customer in another city for $450. Same was returned "not accepted" prior to the preparation of the above Balance Sheet. Included among the Notes Receivable.

(3) The balance of the Accounts Receivable is less than the detail on the Subsidiary Ledger by $32. Assume that the Subsidiary Ledger is correct. $305 of the Accounts Receivable is due from a sister of Storey for furniture purchased some four months ago. The Subsidiary Accounts Receivable Ledger shows adjusted balances as under:

Bennett, R. K.	$1,722
Cass, C. E.	1,020
Foley, A. M.	695
Greb, H. L.	840
Storey, Anne	305
	$4,582

(4) Stock inventory consists of new goods, except for a suite which cost originally $495, about eight months ago. The wholesale price now is $380, plus $15 freight. Another store has a similar suite in the window at $398.

(5) Equipment consists of:

a) Two delivery trucks, $1,310 each. One is 2 years old, and the second is 15 months old.

b) One adding machine, cost $250, 2 years old.

c) One cash register, cost $75, second hand 18 months ago. Now 6 years old.

d) One typewriter, cost $50, new 18 months ago.

e) Store fixtures, valued at $55.

f) Safe, office desk, chairs, and so forth, new 2 years ago, cost $325.

(6) Buildings are of wood construction, 2 years old.

(7) Land purchased two years ago for $1,700; letter on file from local real estate agent to the effect that this land is now worth $2,000, as of Balance Sheet date.

(8) Two-thirds of the Notes Payable are due within the next 30 days.

(9) $500 of the Accounts Payable is due to a brother of Charles Storey for equipment purchased 2 years ago.

The Accounts Payable subsidiary Ledger shows balances adjusted as under:

Morton & Co.	$ 875
Opal & Sons	1,150
Ruch & Co.	275
Sterns Bros.	720
Walton Co.	82
	$3,102

(10) No insurance of any kind is carried.
No allowances have been made to date for depreciation.
No tax reserves ever were considered.

Upon the basis of the above facts, it is necessary for you to present the following:

1. Chart of accounts, without detail explanation.
2. Working sheet with adjustments related to the facts given.
3. Adjusted Balance Sheet.
4. Journal Voucher containing complete explanation of the entry or entries necessary with which to open the new books.

XII

RETAIL MERCHANDISING

Chart of Accounts. Account functions: assets. Account functions: liabilities. Purchase Record. Invoices. Returned purchases. Price Tickets or Tags. Sales Slips. Returned sales. Cash received from customers. Cash Register. Produce transactions. Auditing sales. Daily Statement. Department Sales Abstract. Mark-down records. Auditing the Tally Sheets. Call Slips. Goods given up as to profits (G. U's).

In offering this material on retail merchandising, the plan has been adopted of presenting the outline of a standardized system of accounts without regard to a particular type of concern, or one with a specific number of departments; the underlying idea is that, presumably, this system may be shrunken or expanded at will without material adjustments being necessary.

The scheme is said to be applicable to either style or staple lines, since under either situation the fundamentals are the same. Where style lines are handled, stocks must be planned ahead, be purchased accordingly, and be held to limits which will assure a rapid rate of turnover; but such matters have little, if anything, to do with the system proper.

In the application of the principles advanced, it is assumed that a particular concern may have but one department or a large number of them. In the latter instance, they may run the gamut of such a variety as groceries, produce, dry goods, notions, ready-to-wear, hosiery and knit underwear, men's and boys' clothing, furnishings, shoes, and so forth.

In certain connections, one's knowledge of the so-called standardized principles of accounting undoubtedly will suggest important or minor changes. This is to be brought out more specifically in the solution of one of the problems for

this chapter. Further, a study of the principles utilized should suggest to numerous persons interested in retailing, many points that will improve existing systems to a remarkable degree.

If it is assumed, for example, that in the case of staple goods a decision has been reached as to what kind of stock to carry, and that in the case of style lines careful testing has permitted the merchant to reach a rather definite decision as to what his customers want, the point is arrived at where orders may be placed. But prior to doing this, it seems to be highly desirable to have available certain facts and figures about the business upon which the attention may be focused briefly. It is in relation to this latter point that a good system should be developed by means of which the methods best suited to the purpose in hand may be utilized.

Some of the important matters which a retail merchant should know about his business are so vital that the element of guess should be eliminated entirely therefrom. Briefly, these are as follows:

1. The lines which are selling best, so that stocks and purchases may be adjusted intelligently in connection therewith.
2. The amount of stock carried in each line, so that a control may be had over purchasing which will assure satisfactory rates of turnover. Profits depend more than all else upon one's ability to make the dollars work rapidly.
3. The amount owed by customers, so that a close control over collections may be enforced; further, so that errors in posting and in figuring balances, or those due to some other cause, may be detected quickly and currently.
4. The means by which sales volume may be increased through a proper control of mark-up. If the record is not at hand by which a reliable guide is available in the marking up of goods, goods may be marked up too high; this error means a loss of trade.
5. The cost of doing business is so important a factor in the profit or loss result that the system of accounts provided must be arranged so the exact operating cost is available at all times in such form that the statements prepared relative thereto may be drawn up quickly.

CHART OF ACCOUNTS

The accounts are divided roughly into four classes or groups, as under:

100. Assets
200. Liabilities
300. Revenues
400. Expenses

Each of these groups is detailed further into the various accounts shown in the classification offered. Where more than one department is operated, each such may be given a letter, so that a departmental account will be designated by a combination of a letter and certain figures (see Chapter X, *ante*).

Technically, some justifiable criticism may be leveled against the arrangement in the code; nevertheless, the order suggested, above all other factors, emphasizes the element of simplicity. For the average retail merchant, this factor is always of paramount importance (see Table 2).

ACCOUNT FUNCTIONS: ASSETS[1]

Three accounts relate specifically to the item of cash—two being assets and one a liability:

101. Cash
102. Trade Checks
103. Bank

The Cash account is opened with the amount of all undeposited checks, currency, and barter (trade) checks on hand on the opening date. For this purpose, the various denominations are listed upon a Daily Cash Balance form (Form 51). Even though this treatment is subject to severe criticism, memoranda in the drawer for cash advanced to be paid back later, without the opening of personal accounts in the names of the recipients, are counted.

Barter checks are trade or artificial money used for pur-

[1]For Account functions in general, see Chapter XI, *ante*, Standard Chart.

TABLE 2

CHART OF GENERAL LEDGER ACCOUNTS

ASSETS

101. Cash
102. Bank
103. Notes Receivable
104. Customers' Ledger Control Account
105. Merchandise Stock
106. Buildings
107. Furniture and Fixtures
108. Delivery Equipment
109. Unexpired Insurance
110. Prepaid Interest

LIABILITIES

201. Notes Payable
202. Creditors' Ledger Control Account
203. Trade Checks
204. Taxes Accrued
205. Interest Accrued
206. Pay-Roll
207. Reserve for Losses on Bad Accounts
208. Reserve for Depreciation on Building
209. Reserve for Depreciation on Furniture and Fixtures
210. Reserve for Depreciation on Delivery Equipment
211. Capital
212. Proprietors' Personal Accounts
213. Surplus
214. Profit and Loss
215. Dividend
216. Adjustment

REVENUES

301. Sales
302. Cost of Sales
303. Discount on Purchases
304. Waste Sales
305. Rent Earned
306. Cash Over
307. Miscellaneous

EXPENSES

401. Selling Salary
402. Bonus
403. Buying Expense
404. Advertising
405. Delivery
406. Freight and Express
407. Store Supplies
408. Departmental Expense
409. Rent
410. Light, Heat, and Power
411. Taxes
412. Insurance
413. General Expense
414. Management
415. Office Expense
416. Postage, Telephone, and Telegraph Charges
417. Interest
418. Depreciation
419. Cash Short

DAILY CASH BALANCE

DATE _____ 191____

CHECKS				
GOLD				
BILLS	100.			
	50.			
	20.			
	10.			
	5.			
	2.			
	1.			
SILVER	1.00			
	.50			
	.25			
	.10			
NICKELS PENNIES				
		TOTAL CASH		
TRADE CHECKS	1.00			
	.50			
	.25			
	.10			
	.05			
	.01			
DUE BILLS OR CHANGE				
		TOTAL		

CASHIER

Form 51: Daily Cash Balance.

chasing merchandise from customers. They must be so handled that the maximum of protection in use is secured. Since these checks perform the same functions as real money, they are handled as such except that they cannot be deposited in bank; when paid out or received, they pass through the Cash account in the same manner as actual cash, but go no further.

After counting the trade checks on hand, their amount is entered first in the cash balance so that the total is included in the Cash account charge. Then to cancel the effect of this inclusion, this same total is posted as a credit to the Trade Checks account. It is in this manner that a constant available record is provided of the amount of trade checks in circulation and on hand. After the Trade Checks account has been opened, no further entries are made therein until more of this barter money has been placed in circulation.

The Bank account is opened for the balance on deposit. The accounts of Cash and Bank are posted monthly.

The Notes Receivable account is so operated that the usual Notes Receivable Register or Bill Book is not in evidence. The account is opened from a list of the notes on hand as of the date the system is started, each note being entered at its then value. If no payments have been made upon a bill receivable, the entry therefor reflects face value; if payments have been made thereon, these are endorsed separately upon the back, after which net worth is reflected in the entry. Interest payments should be indorsed upon the backs of the notes affected, but they are not considered in arriving at the unpaid balance to be entered in the Notes Receivable account.

The Customers' Ledger Control is the foundation by means of which it is ascertained that all postings to individual customers' accounts have been made, that the balances are correct, and that fair assurance is available for having all payments from customers actually reach the cash drawer. The account is opened from a list or abstract of what the customers owe—total debits less total credits. In securing

this balance, accounts for "memo purposes only" are not considered, even though the practice may be to carry these in the Customers' Ledger; such accounts should be placed somewhere in the back of the file, where they are retained within this general grouping (see Chapter II, *ante*).

Postings to the Customers' Control come from different sources:

1. Cash Receipts Register
2. Cash Payments Register
3. Bank Record
4. Sales Record
5. Journal

Three items of information relative to the merchandise stock should be available:

1. Amount of stock on hand
2. Sales
3. Cost of goods sold

For this purpose, the following three accounts are used:

105. Merchandise Stock
301. Sales
302. Cost of Sales

The Merchandise Stock account is opened with the inventory of all goods on hand for which bills either have been paid or included in the trade creditors' obligations, this opening being made upon the basis of cost. The retail price of the merchandise is calculated, also, so that the amount of gross profit may be determined before the goods are sold; if this knowledge is not available until after the sale is made, no satisfaction results in learning that such sale was made at a loss. Ignorance as to the gross profit on merchandise probably is responsible more than any other factor for the making of little or no profit.

With an inventory calculated at both cost and retail prices, it is a simple matter to determine what is the percentage of mark-up, and whether this is satisfactory. The percentage of mark-up is found by subtracting the cost amount from

the retail amount, and then by dividing the difference (the mark-up) by the retail amount. An inventory form for this purpose is a simple one, being ruled with columns from left to right about as follows: Department; Cost; Retail; Percentage. The departments are shown thereon both by code number or letter and by name. The form may be of a size approximately 8½ inches by 13 inches (see Chapter III, *ante*—Stock Adjustment and Control).

Further comment concerning stock is deferred until later —particularly with reference to the departmental segregation.

Some will include an account with each member of a firm among the assets, although in the above schedule such account is shown under the liabilities division following that of Capital. At any rate, each firm member is chargeable in his personal account with all merchandise taken and with all cash drawn, being credited with the amount of salary due and cash paid back to the firm coffers. If salaries are drawn in cash, and if cash is paid back for all goods bought, the personal accounts appear unnecessary. In a partnership, the balance in each personal account is transferred annually at closing to the related Capital account. In a corporation, when a dividend is declared, the credit therefor may be made to the personal accounts, and checks issued for the difference or balance remaining therein.

Where land is owned upon which the buildings are erected, an account may be carried with Land and Buildings, or there may be a separate account with each of these two major elements, the latter for depreciation and insurance purposes. If the buildings are on leased ground, only a Buildings account is necessary. Under any situation, the property items are not taken up at more than their original cost. Sometimes, where the land and buildings are owned, it is desired to take up the entire property at original cost ignoring the factor of depreciation to date, the argument being advanced that the depreciation on the building is off-

set by the amount by which the property value has increased in that locality; such practice is questionable.

The Furniture and Fixtures account holds the amounts invested in counters, shelves, show-cases, scales, display fixtures, typewriters, adding machines, and so forth. At times, it is desired that the furniture and fixtures be booked at cost of replacing in kind—not new, but just as good; frequently, this desire is extended to the delivery equipment.

The accounts with prepaid items of expense are opened upon the basis of an inventory taken at the time the system is started. These various amounts must be so handled that the monthly expense inclusion equals the consumption within such period. When new insurance policies are taken out, the premiums are chargeable to Unexpired Insurance; the expired portions are credited monthly to the account and are charged to Insurance, Account No. 412. For the purpose of facilitating the calculation of expired insurance, as well as to have available a definite record of insurance in force, an Insurance Register is advisable. This record may appear in a variety of forms, and yet the essential facts therefor may be set out about as follows: Name of Company; Policy Number; Carried On; Face of Policy; Date Expires; Time to Run; Annual Premium; Monthly Distribution of Premium; Unexpired Premium.

The same fundamental idea advanced just above applies to the treatment of the Prepaid Interest account. When a note is discounted for a period beyond the end of the current month, the interest paid in advance applicable to subsequent months should not be currently charged off as an expense. Interest paid in advance is charged to the Prepaid Interest account, No. 110; at the end of each month, this account is credited whereas the Interest account, No. 417, is charged.

Such items as paper, twine, sales books, stationery, and so forth, should be charged to the Supplies account, when purchased. Monthly, this account is credited, the account of Store Supplies, No. 407, being charged with the estimated

consumption of sales books, paper, and twine, and the account of Office Expense No. 415, being debited with the estimated amount of office supplies consumed.

Other prepaid items may be found. All these accounts should be opened and should be handled in a manner similar to the above, succeeding numbers being given them in the General Ledger.

ACCOUNT FUNCTIONS: LIABILITIES

The Notes Payable account records the obligations in respect of notes given and of drafts accepted. Notes payable may be those discounted—under which interest is paid in advance—and those on which interest is paid after they mature or when paid; in either event, the account entries are for the face of the notes. These notes will be in possession of banks, individuals, and wholesale houses; the booking thereof may cause considerable trouble unless a reliable listing is available.

The account is opened by a detail entering of the outstanding note obligations, each one being entered in the credit column and the total being extended into the credit balance column. Where payments have been made on account, the method similar to that possible for notes receivable may be used—only the unpaid balance of each note being recorded when the account is opened—but this method is subject to decided theoretical accounting criticism.

The Creditors' Control account receives postings from the following records:

1. Cash Record
2. Bank Record
3. Purchase Record
4. Journal

When the system is started, this General Ledger account is opened with the amount of all "unpaid" invoices less (where necessary) the "unused" credit memos, the total being placed in the credit and credit balance columns.[1]

[1] See Chapter II, *ante*—on principles of control.

The amount of trade checks on hand was counted when the Cash Account was opened. This count is made again in the present connection but is extended to include all trade checks held in reserve. Since a greater liability for trade checks exists than is measured by the amount of those on hand—many probably being in the possession of customers—attention should be given to this liability factor. The total barter checks on hand should be deducted from those placed in circulation since their use began, and this difference entered in the Trade Check account, in the credit column. When done, the total of the credit column should equal the total checks placed in circulation, and this amount may be extended into the credit balance column.

The accounts with Expenses Accrued must not be forgotten when the books are opened, and also in the preparation of monthly statements. The usual accounts therefor are:

204. Taxes Accrued
205. Interest Accrued
206. Pay-Roll

The last tax receipts may be used as a basis for opening the Taxes Accrued account. The interest accrued is determined by calculating the interest on notes payable from last payment date to the date of starting the system. The Pay-Roll Account clears the pay-roll and simplifies, presumably, making a proper distribution thereof.

Upon determining what should be set aside in the reserve accounts, these are opened. Whenever all or any portion of a customer's account is lost, the loss is chargeable to Reserve for Loss on Bad Accounts. Extensive repairs to store building—as new roof, painting, and so forth—are to be charged to the account of Reserve for Depreciation on Building where not in the nature of additions. Building additions should be charged to the Building account. Small repairs may be charged to account No 305.

Before the capital accounts can be opened, a simple State-

ment of Assets and Liabilities should be prepared so that the net worth of the concern may be determined. No comment is offered as to the variation in the treatment of the capital element in a sole proprietorship, a partnership, or corporation. This statement need not be at all elaborate in form, a simple spread of items being entirely sufficient. The detail amounts of the assets and of the liabilities are placed in an inside column, and total of each group extended to the right into a second column. The total liabilities subtracted from the assets (exclude the capital accounts in the set out thus far) is presumed to represent the net worth. This net worth then should be equal to the Capital Stock account balance plus the balance that is found in the Surplus account.

Comment relative to the revenue and expense accounts is deferred until later.

PURCHASE RECORD[1]

Inasmuch as 65% of the retailers outside of the largest cities carry three times as much merchandise as they should, certain general comment is offered on stock and mark-up. A comprehensive basic stock plan should be established particularly applicable to style lines but which in principle applies to all lines and stores of every size. Fundamentally, the plan contemplates buying stock on a periodical clearance, say, every three months, and in separating stocks into three major price classes—popular, medium, and higher—and in between these, certain other price classes. Each major division includes a stock complete as to styles, sizes, colors, materials, and so forth; further, the lowest line is that at which the largest sales begin, the next is that at which sales are greatest, and the third is that at which large quantities cease to be sold. In an exclusive store, there is the highest priced complete line; popular stores have the cheapest, low-

[1]See Chapter II, *ante*—on Purchase Book; Chapter III, *ante*—on Purchase Procedures.

est priced complete lines; the concern of average type parallels both of these others.

Four minor lines should be considered in addition to the three major ones, as:

1. Cheapest line ever advertised—an occasional job lot purchased to be sold at bargain prices;
2. Cheapest goods usually handled at regular prices;
3. Between complete lines;
4. Goods at higher prices.

The first two and the last are "feeler" lines. The first two warn of the demand for lower priced goods and help fix the price of the lowest priced complete line. The last one permits of securing information on which the highest priced complete line prices may be raised a little. The third minor line fills the gaps between the three complete lines.

In applying the above ideas to style stocks and making a division of the latter thereunder, the following results:

Major	*Minor*
	Cheapest lines ever advertised
	Cheapest goods customarily handled at regular prices
Lowest priced complete line	
	Small quantities of goods at "between" prices
Best selling complete line	
	Small quantities of goods at "between" prices
Highest priced complete line	
	Goods at higher prices

The above represents a model stock plan for style lines. A Model Book is used to keep a record of the model numbers of all merchandise purchased. Where lines are not essentially style lines, the above so-called scientific method of organizing stock is perhaps unnecessary, it usually being assumed as satisfactory merely to keep a careful record of each line so that the purchases will not be made by guesswork; otherwise, a rapid turnover rate will not materialize.

In order to secure the information necessary to operate the plan above suggested, a suitable record system must be

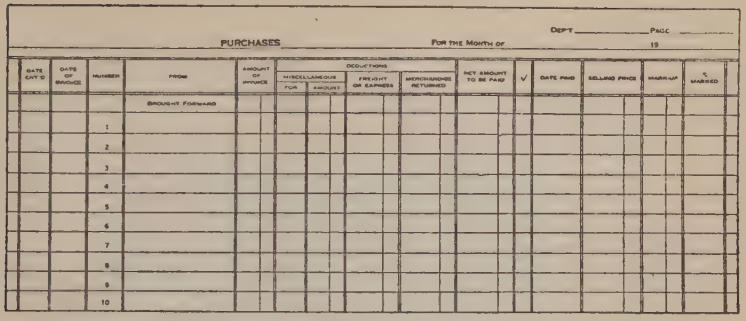
adopted; this will supply the needed facts and figures.

An intelligent control of mark-up usually will produce satisfactory results. One must be absolutely certain the average mark-up is always sufficient to cover the total cost of doing business, and yet leave a fair net profit. It is not necessary, however, to mark all goods to show a certain standard percentage of profit. Goods which sell quickly and of which only a small stock need be carried—because quick purchases may be made—need not be marked very high above actual cost of doing business. Slower turning merchandise which is bought in large quantities must be marked a little higher, and novelties which require a long time to secure must be marked still higher. But the average on all should not exceed the standard as set.

The requisite information necessary to work intelligently along the lines suggested requires a carefully planned Purchase Record. It should be arranged always with a "retail" column as well as with a "cost" column, and should be so kept that it may be referred to without the necessity of looking up a particular invoice.

The Purchase Record is so ruled that all deductions are entered when the invoice is booked, and the net amount of merchandise placed in stock should be known at any time. Since the Discount column appears on the Bank Record, it is omitted from the present form. Being a loose-leaf record, the sheets may be arranged in a binder provided with a section for each department; hence, each time an invoice is entered, the departmental division occurs. If a bill has merchandise for more than one department, the inclusion must be split between the departments affected. A form for this record is shown in Form 52.

Since certain kinds of merchandise cannot be secured as quickly as others, causing the rate of turnover to be slower in the former case than in the latter, and since the demand is much greater for some lines than for others, purchases, stock, and rate of turnover can be controlled only by separating all merchandise transactions so as to know exactly



PURCHASES For the Month of Dept. Page 19

DATE ENT'D	DATE OF INVOICE	NUMBER	FROM	AMOUNT OF INVOICE	DEDUCTIONS: MISCELLANEOUS FOR	DEDUCTIONS: MISCELLANEOUS AMOUNT	DEDUCTIONS: FREIGHT OR EXPRESS	DEDUCTIONS: MERCHANDISE RETURNED	NET AMOUNT TO BE PAID	✓	DATE PAID	SELLING PRICE	MARK-UP	% MARKED
			BROUGHT FORWARD											
		1												
		2												
		3												
		4												
		5												
		6												
		7												
		8												
		9												
		10												

Form 52: Purchase Record.

what is happening currently as to each principal line carried. This contemplates departmentalizing. Even though sales may not be departmentalized, a separation of purchases is possible to avoid overbuying.

In using this idea for department forms, it is not necessary to separate stocks, purchases, and sales into departments, and it is unnecessary to change the form or plan for recording purchases when a new department is added to those already present. All that is necessary is to add new sections to the binder.

In addition to the sections in this record for merchandise departments, there should be a section for all bills for items which are not merchandise. In these sheets, the titles of the accounts to be charged are written across the retail columns.

In operating this Purchase Record, it is unnecessary to keep separate accounts with each firm from which goods are bought. From many concerns, only one or two bills a year are received; separate accounts for these need not be used. But if it should prove desirable to carry certain detail accounts, it may be done easily.

Each day, as soon as all invoices have been entered, and each section of the Purchase Record footed, a proof is to be taken to make certain that no invoices have been missed and that no amounts have been entered incorrectly. After all

deductions have been made, a list of the cost amount of each invoice is prepared and totaled. Next, one should go through the record and list the totals of the net amounts in all sections to ascertain that this total equals the total of the list of amounts of invoices. These lists should be saved from one day to the next so that such total may be added daily to the current day's entries for additions, in order to determine the total entered to date.

Whenever a bill is paid, such fact should be noted in the "paid" column of the Purchase Record. Therefore, to prove the accounts payable balance, so that bills will not be paid twice, the process is as follows:

1. Determine controlling account balance on the General Ledger;
2. Add total amount of unpaid bills on Purchase Record;
3. Check unpaid bills file contents against Purchase Record;
4. Steps (1) (2) (3) should result in the same figure.

INVOICES[1]

One of the first steps in establishing a Purchase Record system it to arrange a simple means of handling invoices. When an invoice is received, this usually happening prior to the receipt of the goods, it may be placed on a board file —that of the Unchecked Invoices. Next, one should secure a rubber stamp similar to that illustrated in Form 53, and each invoice should be stamped upon its face. When the goods are received, the invoice should be checked there against, and when the quantity is found to be correct a check mark against each item indicates such fact.

For all merchandise to be returned to vendors, a Debit Memorandum should be prepared. In this connection, one should see that the terms and dating per invoice are correct, so that no discount loss will occur when the bill is paid.

One should determine the price at which the article is to

[1]Compare with Chapter III, *ante*—Illustrations for Routing Material Invoices and Receiving Slips.

CHICAGO, ILL. December 21 19 24

MARKS' NOVELTY SHOE CO.

SOLD TO Holman Shoe Store

TERMS 6/10

9132	6	Pairs Rubber Boots	2.72	16	32		
9030	12	" Hip Rubber Boots	3.91	46	92		
						63	24

ENTERED

DEPT	PAGE	LINE
SELLING		
COST		
MARK-UP		
%		

Form 53: Invoice with Invoice Stamp.

be sold and should see that the same prices which are placed on the price tickets are shown opposite the respective items on the invoice. When all the goods of an item are to be returned, no selling price will be shown on the face of the invoice; but when only a portion of an item is to be returned, the selling price as marked upon the goods is to be shown.

Deductions for freight and expressage, overcharges, errors in extensions, and so forth, are taken off the face of the bill without making any other record of them.

In the office, the retail extensions and footings should be made at the same time that the cost extensions and footings are figured, the retail extensions being in red ink, and being placed in any convenient position on the face of the invoice. If red ink is not used in making these extensions, the retail amount frequently will be paid instead of the cost amount, especially if the invoice has not been made out on a billing machine or a typewriter.

When the invoice is ready for auditing and entry in the Purchase Record, the signature of the checker should be added to it. Further, the number or letter of the department should be written on it so that the wrong department will not be charged therefor. When the auditing has been completed, the cost and retail totals are entered in the

rubber-stamp form attached, and the cost subtracted from the retail amount to secure the mark-up both in amount and in percentage.

After the invoice has been entered in the Purchase Record, the page and line thereof on which entry was made should be marked on the invoice so that a quick locating of the entry may be made when required. After entry, the bills should be placed in an unpaid file, those from each firm being together, with the *oldest* one on top.

When the bills are paid, the Purchase Record entries therefor must be marked "paid." If an invoice contains merchandise for more than one department, as many rubber-stamp impressions are made on its face as there are departments to be charged.

RETURNED PURCHASES

For returning goods to wholesalers or to manufacturers, a Debit Memorandum is prepared in triplicate:

1. Original to vendor as soon as goods are shipped.
2. Duplicate (tissue) permanently bound in pad. It carries no printing other than the Debit Memo number.
3. Triplicate is attached to invoice so that its amount may be deducted from the invoice total. If the latter has been entered in the Purchase Record, this triplicate is handled exactly as a Credit Memo; the entry is made in red ink, and the retail price is placed on the triplicate the same as is done on the invoices when they are checked, the retail price being extended and carried into the Purchase Record the same as the retail price on the invoice. If the form is prepared for goods sent out to be repaired, it is left in the book until the goods are returned. These repair transactions are not entered upon the Purchase Record unless an article is returned to the manufacturer for repairs, and instead of repairing it, the latter returned a Credit Memo.

The forms are bound in sets of 50, like Sales Tickets, the size being approximately 5½ by 8 inches. The following information to be placed upon this memo is illustrated as:

1. In heading:
   Number
   Date
   Name and address of vendor
   Statement that vendee has returned, and so forth, from invoice of, and so forth, for reasons as shown below.
2. Body:
   Quantity
   Description
   Price
   Amount
3. Foot of form:
   Statement that this amount has been deducted from vendor's invoice dated....
   Request for credit confirmation
   Signature

PRICE TICKETS OR TAGS

Every article in stock should carry a Price Ticket showing in code the retail price and certain other desirable facts, the tag method being superior to any other one by means of which this information is made available. The adoption of a double-price code is preferable, being more difficult for the customer to decipher than is the single one. One word of 10 letters forms the substitutes to be used for dollars, and the letters of another word of the same number of characters are utilized as substitutes for cents. With such a code, the cost price of each article may be carried on the price tag. The information on the price tag should be complete except as to the terms to be received if a re-order is contemplated; for example:

1. A letter shows the year in which the article was placed in stock. This should be changed once or twice a year.
2. A number next to the above letter indicates the firm from which the article was purchased, the complete index of these firms with assigned numbers being kept in a pocket memo book. If not desired, as in the case of quick selling novelties, this number may be omitted.

3. Next, below, is shown the lot number assigned the invoice by the wholesaler.
4. Next, is displayed the cost price in code.
5. Last, is shown the selling price in actual figures.

SALES SLIPS

With but few exceptions, stores too busy to make out Sales Tickets are too busy to make much money. Employees should be compelled to prepare a record of each floor transaction for the protection of both themselves and the business. Each clerk is provided with a book of Sales Slips, and it should never be permitted for one clerk to use the book of another. Further, every ticket should be accounted for.

Each book of Sales Slips contains 50 tickets in duplicate, numbered consecutively from 1 to 50. On the inside back cover is a Tally Sheet with lines numbered from 1 to 50 to correspond with the ticket numbers. The sheet is columned for "cash" and "charge" sales. Each time a ticket is filled out, its amount is entered on the Tally Sheet in the proper column and on the right line.

Sales Tickets should be used for no other purpose than to record each sale made. Returned goods should be entered upon a Merchandise Returned Slip, prepared in duplicate; these slips come 50 in a book. When produce is brought to the store by a customer, a record is made upon a Produce Check; these are not prepared in duplicate, but they are numbered consecutively. When a customer pays money on account, the record should be so made that it is impossible to overlook a posting of the amount to the customer's account, but no Sales Slip is to be used for such purpose. The cash and charge Sales Tickets taken in during the day should be kept separate, one group from the other, to facilitate their auditing and entry.

Although all sales are separated fundamentally as between cash and charge sales, the latter class is separable further into four divisions:

1. Regular charges. These relate to customers who have regular accounts upon the books; in a cash store, there will be none.
2. C.O.D. charges. Goods to be collected for on delivery.
3. "Will Call" charges. These are the usual c.o.d. "holds." Goods are held at the store so that the customer may make payments thereon until these are completed, after which delivery is made.
4. Approval charges. Hereunder, goods are sent out for the purpose of having the customer make a selection, and so forth.

For each of the above, it is possible to use the same type of Sales Ticket, the word " charge," and so forth, being written in the space provided for showing the amount received. When a payment is made on a purchase, it may be desirable, for ready audit, to prepare both a charge ticket and a cash ticket. When merchandise is sold at less than marked price, whether at a discount or for some other reason, the mark-down amount is written in the lower left-hand corner and circled. When goods are shipped to a commission house, a charge Sales Ticket may be prepared for it at the regular sales price amount. Sales Tickets are so familiar to everybody that no form or description thereof seems to be necessary. It is suggested that the following differentiations be kept in mind:

1. For cash sales, no name is written at the top of the Sales Ticket, and in the "amount received" space is entered the cash received from the customer. Further, the letter "C" may be entered at the top for quick separation. If a cash sale is to be delivered, the Customer's name and address are written on the lower portion of the ticket; a separate type of slip is unnecessary.
2. When trade checks are received for goods sold, rather than cash, a Sales Ticket is prepared and "T.C." placed in front of the "amount received" space; the change due the customer, if any, should be in trade checks. If part cash and part trade checks are received in payment for a sale, the amount of each may be set out in the "amount received" space.

RETURNED SALES[1]

The Merchandise Returned Slip is a triplicate form, 50 sets in a pad or book. The triplicate copy is the middle one, a sheet of tissue, numbered, but containing no printed matter; it remains in the book after the original and the duplicate have been detached therefrom. Whatever book happens to be available may be used by any clerk. The duplicate copy is the customer's receipt. When money is refunded on goods returned, the customer should place his signature upon the back of the original copy in order to facilitate the making of an audit.

A similar slip is prepared when goods out on approval are returned, except that the reason for the return is "approval." When goods are returned for exchange purposes, an "X" is marked in front of the words "other goods" shown thereon at the foot of the slip. This slip is illustrated in Form 54.

CASH RECEIVED FROM CUSTOMERS[2]

The intimate relation existing between the sales system and the general cash scheme makes it necessary to provide for handling all cash "in" and "out" before the sales plan may be assumed as complete; hence, certain cash comments are offered at this point. When a customer pays on account, a small slip is filled out in the form of a receipt, this being in duplicate, several making up a page—the original being given to the customer and the duplicate retained.

Frequently, the problem of taking care of numerous customers who want to pay their bills is more than can be solved by the use of the ordinary Cash Received Ticket. In this connection, a triplicating receipt book is resorted to, by means of which the writing of customers' names is entirely eliminated in the Record of Cash Received. Each

[1]See Chapter IV, *ante*—Sales Deductions; Cost of Returned Sales.

[2]Compare with Chapter V, *ante*—Cash Receipts.

675-1

MERCHANDISE RETURNED SLIP

DATE	SOLD BY	EXCHANGED BY

CUSTOMER'S NAME

ADDRESS

DEP'T	QUANTITY	DESCRIPTION	AMOUNT	

WRITE TOTAL AMOUNT HERE

DOLLARS	CENTS

CLERK'S SIGNATURE

AUTHORIZED BY

REASON

☐ OTHER GOODS ☐ CASH REFUND ☐ CHARGE CREDIT

☐ TRADE CHECKS ☐ C.O.D CREDIT ☐ WILL CALL CREDIT

Form 54: Merchandise Returned Slip.

page contains, say, four receipt forms. The original of each set, on check paper, is numbered and perforated, and handed to the customer. The duplicate, of tissue, is numbered only, and remains in the book as a permanent record of all cash transactions of this character, those other than cash sales. The triplicate is on yellow paper and is printed and perforated like the original. By placing a piece of double-faced carbon paper between the duplicate and triplicate copies, three impressions of each entry are secured by one writing.

The triplicate copies remain in the book until the close of the day, when they are torn out and handled like Cash Received Tickets. Since a record of the money received from customers appears on the triplicate forms, it is not necessary to list the customers' names in the Record of Cash Received. It is only necessary to post the total amount of the customers' payments from the Sales Audit Sheet to the Record of Cash Received. The numbers on these tickets should be checked to determine that none are missing.

These receipts are sorted alphabetically for posting to the Customers' Ledger. The form itself is not peculiar, being merely a regular receipt form with the exception that in the lower left-hand corner a separation of each receipt is made as between cash and trade checks.

CASH REGISTER

This term designates the current cash in use, regardless of the kind of container, and does not refer to reserve cash—that in the safe. In the morning, the register is empty. Ten dollars are taken from the safe for change purposes, and a memo is placed in the safe to show such cash withdrawal. The same is done with trade checks. At the end of the day, the change fund is taken out before the cash in the register is counted. It may be that instead of placing this fund back in the safe overnight, it is put in a bag and there held to start the next day's activities. Subsequently, the cash is

counted by denominations, and a Daily Cash Balance form is filled out.

When cash or trade checks are paid out for anything except produce, a Cash Paid Out Voucher is prepared. In the case of freight or expressage, the departments to be charged should be shown thereon. The person who receives the money should always sign the receipt. Each time a slip is made out and the money is paid on it, the slip should be placed in the cash register or drawer so cash may be balanced each day.

The form for the Cash Paid Out Voucher requires no illustration, inasmuch as almost any standard ruling is satisfactory, provided space is set apart thereon for showing the account or accounts which are to be charged with the expenditure.

PRODUCE TRANSACTIONS

This matter concerns only retailers who carry groceries and who take produce from customers in exchange for other merchandise. In general, although a profit will not be shown on produce transactions, it should be possible to keep loss down, or at least to keep it from increasing. A Produce Check, showing quantities received, and so forth, should be paid in trade money, so that the customers will be prevented from trading elsewhere.

The form for a Produce Check has the general appearance of a regular invoice form, but at the bottom of it there should appear the following information: What amount was paid with trade checks; what amount was paid for in cash; what amount was credited on account; and the signature of the clerk who was responsible for the transaction.

AUDITING SALES[1]

This comprehends securing data from the various sales records which may be valuable for merchandising use. Re-

[1]Compare with Chapter VII, *ante*—Sales and Sales Returns.

gardless of the system, value is present only where its operative features are checked constantly against timely merchandise data. The basis for securing this information lies in the Sales Tickets. But inasmuch as these slips may be mishandled in various ways, it is not safe to assume that the mere preparation of a Sales Ticket for every sale will prevent all losses.

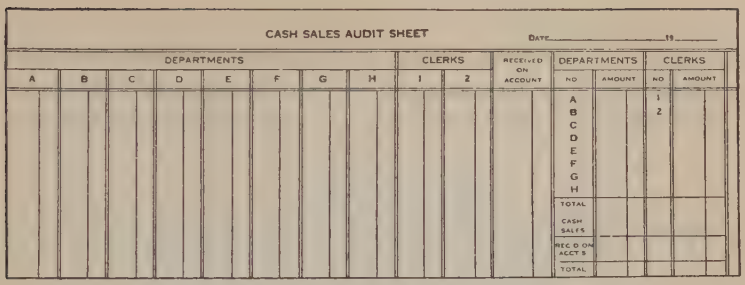
Neglect to charge an article, or the loss of a charge slip before it reaches the office causes a loss in six different ways:

1. Loss of wholesale cost;
2. Loss of handling cost;
3. Loss of profit on each such article;
4. Loss of time spent in purchasing the article involved;
5. Employee carelessness is accentuated which causes other losses;
6. Time is wasted in attempting to locate the original loss.

In order to curtail the volume of the above, the following should be done daily, relative to the Sales Tickets:

1. The sum of all cash tickets and received-on-account slips less refunds made should be checked against the cash taken in that day to determine that both net totals are equal.
2. The sum of all the charge tickets less the merchandise returns should be checked against the total amount posted to the individual customers' accounts to determine that both net totals are equal.
3. Every Sales Ticket made out during the day must be traced to the office and be accounted for properly.

Each morning, the Sales Tickets for the previous day are entered upon a Sales Audit Sheet. Those in the cash file are sorted into three piles: (1) Cash sales; (2) Received-on-accounts; (3) Cash refunds. Then upon one of the Sales Audit Sheets—the Cash Sales Audit Sheet— each ticket of each of the three piles is entered in the "Department" columns and in the "Clerks" column, except for the received-on-accounts; the latter are entered only once in the column provided. Since each ticket has a department letter and a clerk's number written on it, the segregation is a simple


CASH SALES AUDIT SHEET

Date _____ 19____

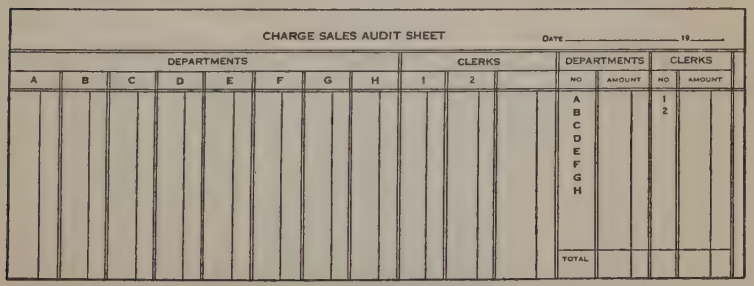
DEPARTMENTS								CLERKS		RECEIVED ON ACCOUNT	DEPARTMENTS		CLERKS	
A	B	C	D	E	F	G	H	1	2		NO	AMOUNT	NO	AMOUNT
											A B C D E F G H		1 2	
											TOTAL			
											CASH SALES			
											REC'D ON ACCT'S			
											TOTAL			

Form 55a: Cash Sales Audit Sheet

matter. After these columns have been footed, the amounts sold in each department and by each clerk are posted in the columns at the right. Then, by addition, the total cash sales for the day by departments and by clerks is secured.

Next, the charge sales tickets are sorted into two piles: (1) Charges; (2) Returns; and a Charge Sales Audit Sheet is prepared. If the returns in a department exceed its sales, either cash or charge, the difference between the sales and the returns should be ringed so that the proper deductions will be made from the total of the black ink amounts in order to secure the day's net total.

Whenever produce taken from customers is shipped to commission houses, the clerk responsible for such shipment should enter the items as a charge sale, and send the ticket to the office in the usual way. But since the clerk should not receive credit for such a sale, these tickets may be en-


CHARGE SALES AUDIT SHEET

Date _____ 19____

DEPARTMENTS								CLERKS			DEPARTMENTS		CLERKS	
A	B	C	D	E	F	G	H	1	2		NO	AMOUNT	NO	AMOUNT
											A B C D E F G H		1 2	
											TOTAL			

Form 55b: Charge Sales Audit Sheet

tered on the Audit Sheet against a "miscellaneous" clerk.

These Sales Audit Sheets may not be sufficiently flexible where a large number of clerks or departments is found. In such a case, it may be better to use a Sales Book form, each page of which consists merely of a number of columns. The first page is used for departmental cash sales, the next for cash sales by clerks, the third for charge sales by departments, the fourth for charge sales by clerks, and so on. This latter method is almost certain to be preferred if there are many Sales Tickets which contain records of merchandise sold in several of the departments.

Illustrated forms for the Cash Sales and the Charge Sales Audit Sheets are offered in Forms 55a and 55b.

DAILY STATEMENT

After having secured the total amount of cash sales by clerks and by departments, and the total amount of charge sales by clerks and by departments each day, these amounts may be brought together upon a Daily Statement. This form contains other information at the bottom which is vital as well as interesting; it is illustrated in Form 56.

DEPARTMENT SALES ABSTRACT

The daily separation of sales by clerks and by departments may be tabulated upon a Department Sales Abstract so as to have available a ready record of the amount of merchandise sold in each department, or by each clerk. In fact, one such sheet may be used for departmental information, and another for that relating to the clerks. Each form contains 31 lines, one for each day in the month. The figures for this form come from the Daily Statement.

MARK-DOWN RECORDS

Whenever the regular price of an article is cut, there is a corresponding loss of profit; unless these losses are re-

corded systematically, and checked from time to time, they may amount to more than the business can afford. Poor buying may be the cause of mark-downs, or bad financing may make them necessary in order to secure ready cash.

DAILY STATEMENT

_____ 19 ____

DEPARTMENT SALES				CLERKS' SALES			
DEPT NO.	CASH	CHARGE	TOTAL	CLERK NO.	CASH	CHARGE	TOTAL
TOTAL				TOTAL			

SALES COMPARISON	THIS YEAR	LAST YEAR	INCREASE (BLACK) DECREASE (RED)
Sales for Current Month Yesterday's Report			
Sales To-Day (Add)			
Total Sales This Month to Date			
Sales Since Beginning of Fiscal Year to End of Last Month (Add)			
Total Sales to Date			

CASH ACCOUNT		CUSTOMERS' ACCOUNTS	
Balance on Hand First of Month		Balance First of Month	
Received From Cash Sales This Month (Add)		Charge Sales This Month Net (Add)	
Received From Customers This Month (Add)		Total	
Received From Other Sources This Month (Add)		Received on Account This Month (Deduct)	
Total		Balance Now	
Paid Out This Month (Add)		CREDITORS' ACCOUNTS	
Deposited This Month (Add)		Balance First of Month	
Balance Cash on Hand		Invoices Entered This Month (Add)	
BANK ACCOUNT		Total	
Balance First of Month		Paid This Month (Deduct)	
Deposited This Month (Add)		Balance Now	
Total		PURCHASES	
Checks Drawn (Deduct)		Goods Received Since Inventory · This Year	
Balance in Bank		" " " " Last Year	
Total Available Cash		Unfilled Orders Now	
		" " Year Ago	

Number of Employees This Year _____ Last Year _____

Weather This Year A. M. _____ P. M. _____ Last Year A. M. _____ P. M. _____

Remarks:-

Form 56: Daily Statement.

Previously, it was noticed that, on the Sales Ticket, each time an article is sold for less than the regular marked price, the difference between the sales price and the marked-down price may be written with a ring around it in the lower left-hand corner. Daily, when the tickets are audited, the amounts should be tabulated on a Mark-Down record.

In case a mark-down is to be taken on a quantity of goods at one time, to eliminate the mark-down on each Sales Ticket when a sale is made, a Reductions Sheet may be used. Hereon is prepared an inventory of the articles to be reduced in price, in accord with the information called for. Next, all price tickets attached to the articles marked down as shown on the Reductions Sheet should be changed to the new price to prevent a clerk from writing the mark-down on the Sales Ticket when a sale is made. When all mark-downs have been entered, the sheets should go to the office where the total amount of mark-down is calculated and should then be posted to the Mark-Down Record.

The Mark-Down Record form requires no illustration, inasmuch as it is only necessary to have a columnar sheet, say, one for each month, the columns being headed with the department letters from left to right across the page, and a recapitulation down in the right-hand corner.

AUDITING THE TALLY SHEETS

Previously, it was mentioned that each time a clerk recorded a sale, the amount should be written on a Tally Sheet kept in the back of his Sales Tickets' book. After the sales slips have been received in the office each morning and have been added up to find the amount sold in each department and by each clerk, and after these amounts have been proved with the amount of cash taken in, they should be sorted into piles, one for each clerk. Then the amounts written on the Sales Tickets should be checked off on the Tally Sheet to discover whether all tickets have been accounted for.

Frequently, some tickets will be found missing, probably charge tickets which, unless promptly located and charged to the customers' accounts, will produce a loss. Hence, the separation on the Tally Sheet as between cash and charge sales.

The first thing to do when a check is lost is to question the clerk who wrote it, so that the office may prepare a duplicate for charging purposes. It may be desirable to have the Tally Sheet arranged so that customers' names will be shown thereon, thus making it unnecessary to trust to a clerk's memory.

The sole purpose of Tally Sheets is to check lost Sales Tickets.

CALL SLIPS

These contain the calls for out-of-stock goods as inquired for by customers. For each such call, a Call Slip must be written. In handling calls, immediate action is necessary, because no effort should be spared to get the article called for if it is in the line of merchandise carried. If possible, the article should be secured while the customer waits; otherwise, an order should be taken for it.

Call Slips in the larger stores may be prepared in duplicate, whereas a duplicate copy in the small store is unnecessary. Further, in connection with these slips, some record system should be installed to show how many calls of a certain kind are being made. A sufficient number of calls for a certain article should make it necessary to consider the question of whether or not that article should be stocked, although care is necessary hereunder to determine if a false demand is being created just prior to the visit of a traveling salesman handling such goods.

GOODS GIVEN UP AS TO PROFITS (G. U.'S)

For some reason or other, these goods are no longer desirable; hence, the longer held, the more profits are lost

and the more such merchandise becomes slow-selling and not successful. The handling of G. U. goods depends considerably upon the freedom with which new goods may be purchased. Nevertheless, they must be separated and disposed of in order that the rest of the stock may be free selling and profitable.

Frequently, G. U. goods must be sold below cost, but, if resurrected in time, and proper means taken for selling them, the sales in general need not be at a loss; such goods, however, should be moved promptly. The first step is not to mark them down unnecessarily, but, if possible, to have a plan in operation by which the clerks will secure an extra sales percentage sufficiently attractive to make them work hard to dispose of the goods.

The principles of handling G. U. merchandise may be epitomized thus:

1. Separate such goods from the rest of the stock and display conspicuously and attractively.
2. Impress the clerks with the importance of selling this merchandise first.
3. Follow up the G. U. items systematically and force them out of stock. Records may be kept to show which clerks are selling them, so that proper credit and commendation may be given.
4. The original Price Ticket should be replaced by one of a different hue.
5. These goods may be used as specials.

Test Questions

1. What is the aim of department store accounting?

2. State the difference, if any, between department store and other mercantile business accounts.

3. Suggest a plan for opening a set of double-entry books for a department store, explaining fully the work required to arrive at a true profit for each department and for the entire business.

4. How could a manager, who does not keep the books but is interested in the profits of one department of a business, unduly increase the amount of his compensation? This compensation is dependent partly upon profits shown.

5. In a large country store containing several departments, produce is purchased by the grocery department and paid for with orders on the other departments. How should these orders be treated in determining the profit or loss of the several departments?

6. Enumerate the steps you would take to audit the cash receipts in a department store in which a sales-check system is used, to ascertain that all cash has been received for goods sold. Assuming collusion is discovered among employees which resulted in loss, what do you suggest to prevent it?

Problems

(*a*) It is assumed that the principles and forms described in this chapter are utilized fully in the accounting system of the Bon Ton Store, capitalized at $100,000. This store has six departments: Ready-to-Wear, Corsets, Notions, Dress Goods, Underwear and Hosiery, and Domestics.

Prepare in the form of a report all recommendations you would make which you believe are an improvement over the present system. This does not contemplate the complete system but just those phases covered in the chapter.

(*b*) Devise a chart showing the accounts for a department store with six departments.

(*c*) You are engaged to install an accounting system in a department store. The management desires to divide the store into 14 separate and distinct departments, as follows:

Piece Goods	Notions	Hosiery
Children's Dept.	Millinery	Underwear
Draperies	Silks	Gloves
Ladies' Ready-to-Wear	Shoes	Luggage
	Corsets	Linen

Required:

State what books you would employ.

Describe the organization of each book and explain its function.

Draw up a list of the accounts you would open up in the General Ledger, and place them in the order they would appear on a Trial Balance taken from that Ledger.

(*d*) Outline briefly a system of accounting for a hardware jobber who wishes to know the profits on each of four different classes of merchandise. Include a list of books and records, explaining functions of each and the manner of their use.

(*e*) You have been hired as an accountant by L. I. Ruble, of Syracuse, to install for him in his business a system of accounts as simple in character as possible, but complete in essential details. You are to install the system, open the books, teach the bookkeeper how to operate it, and supervise the work for a period of three months, including the drawing off of the monthly statements. Your fee is to be $250 and the cost of the books and supplies is estimated not to exceed $50.

Upon examination and conversation with Mr. Ruble, you secure the following essential information concerning his major activities, all of which are carried on from his place of business.

A. *Plumbing business.* This contemplates doing sundry work of various kinds in private residences:

1. Work is done on a contract basis, six men being employed full time during the building season.
2. Men are paid by the week and their time is charged for by the hour.
3. Considerable repair work is done all the year round.
4. Mr. Ruble has full charge of outside work, figures all contracts, assigns the men to the different jobs, and keeps their time.
5. Mr. Ruble keeps account of all materials furnished to the different contracts.
6. When each contract is completed, he assembles all his figures in a crude and inaccurate manner for labor and material so as to determine the profit on each contract. These figures should be, but are not, of value in figuring on a similar piece of work.
7. Most material needed on a contract is ordered specially therefor, as piping, radiators, valves, heaters, copper, bathroom fixtures, and so forth. A permanent record is necessary, showing the quantity and cost of all materials furnished each completed contract.

B. *Store.* This contemplates the sale of all the various articles and appliances found in an average store of this size. Numerous items are used in the plumbing work.

1. Agent for the Red Hot coal range, the Everready electric and gas ranges, and the Sucker vacuum cleaner. One of each of these in the different models is furnished by the manufacturers for exhibition and demonstration, all of which are carried on memoranda.

   (*a*) Only a small stock is kept on hand.

(*b*) All these goods are sold on the instalment plan, a deposit to be made at time of sale, and the balance to be paid in 10 monthly payments.

2. A complete stock of bathroom fixtures and kitchen utensils is carried, these being sold largely for cash, credit being extended only to regular customers when the latter ask for it.
3. Average stock carried inventories around $8,000.
4. Fixtures and store equipment valued at about $1,200.
5. Small Ford delivery truck is used for delivering goods, and in connection with the contract work.
6. One clerk employed in the store has duties which comprise taking care of stock, arranging window displays, recording charge sales, and proving cash daily; he also does some of the buying.

C. *General.* The following information is of a general nature:

1. No bookkeeper has ever been employed, Mr. Ruble keeping his own accounts during his spare time.
2. Invoices and expense bills as received are placed in a clip file, no entries being made until they are paid. After payment, these are supposed to be filed alphabetically in a box file; however, at present, many are seen to be strewn all around the little enclosed space called an office. About 75 invoices are received each month.
3. Cash payments are entered upon a one-column cash book.
4. Charge sales from stock are entered individually, in pencil, in a day-book by the clerk, and are irregularly posted by Mr. Ruble into a small customers' ledger containing some 200 more or less active charge accounts and about 100 instalment accounts.
5. Cash sales are entered upon a cash sheet and the money is placed in a drawer.
6. Deposits are irregularly made, since Mr. Ruble always plans to have sufficient cash on hand Saturday mornings with which to pay his help.
7. Monthly billings to charge customers are never out on time, since Mr. Ruble always makes out all bills himself.
8. Collections are slow and irregular, there being but little in the way of follow-up; heavy losses in proportion to sales result.
9. Cost of clerical help must be kept as low as possible, but

Mr. Ruble agrees to hire a bookkeeper for about $22 a week.

Requirements:

1. Chart of General Ledger accounts, properly classified, plus a brief description covering the use of all accounts particularly peculiar to this business.
2. Rulings of all books and forms from which postings are to be made. Give particular attention to the handling of instalment sales and contracts.
3. Pro-forma monthly Balance Sheet and Statement of Profit and Income.
4. Complete instructions covering operation of the system.
5. List of office appliances you would recommend to facilitate the work.

XIII

RETAIL MERCHANDISING
(Continued)

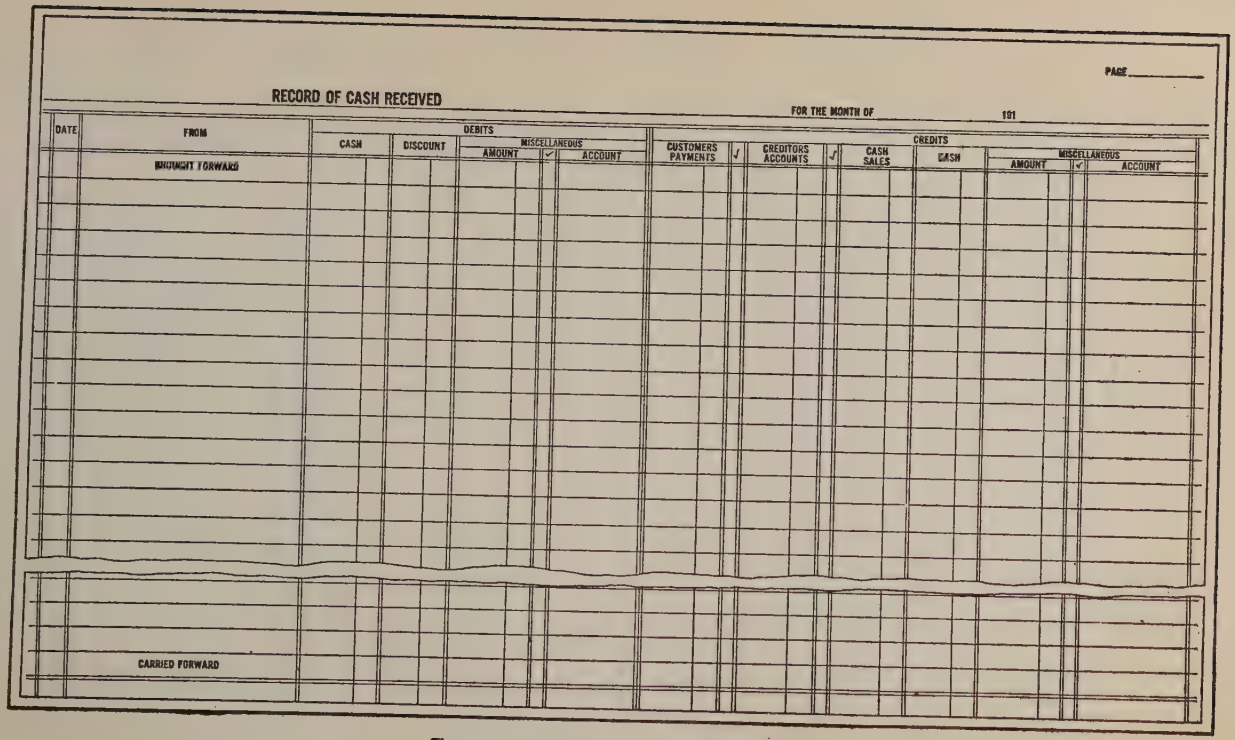
Cash records. Voucher Check and Remittance Memorandum. Customers' accounts: Customers' Ledger. C.O.D's—Will Calls—expense. Layout of office routine. Corrected Invoices. Merchandise transfers. Purchase Statement. Monthly routine chart. Inventory: Stock Ledger. Taking the inventory. Journal. Monthly statements: entire business. Expense distribution. Monthly Departmental Profit and Loss Statement. Annual profit and loss figures. Merchandise stock plan. Record of Orders Placed. Advance Sales Report. Weekly Merchandise Statement. Monthly Turnover Report. Clerks' sales reports. Office organization. Conclusion.

REGARDLESS of how simple or elaborate the Cash Books may be, it should be possible at all times to know the total available cash on hand; otherwise, payment cannot be made of bills falling due. If it is desired that business facts should be known currently, postings must be kept up to date. But since a strong tendency exists to neglect this posting work, the cash records should be so arranged that this labor is kept at a minimum. Presumably this idea is expressed in tangible form in the cash records illustrated.

CASH RECORDS[1]

The Record of Cash Received is columnar in form. Since every amount is entered first in the "debit" section and then again in the "credit" section, the sum of the totals of all the columns in the debit section must at all times agree with the sum of the totals of all columns in the credit section. At the end of each day, when this is found to be true, a line (red or black) may be drawn across all money columns and the totals of the various columns writ-

[1]Compare with forms shown in Chapters II and V, *ante*.



PAGE_____

RECORD OF CASH RECEIVED

FOR THE MONTH OF _____ 191

DATE	FROM	DEBITS					CREDITS								
		CASH	DISCOUNT	MISCELLANEOUS			CUSTOMERS PAYMENTS	✓	CREDITORS ACCOUNTS	✓	CASH SALES	CASH	MISCELLANEOUS		
				AMOUNT	✓	ACCOUNT							AMOUNT	✓	ACCOUNT
	BROUGHT FORWARD														
	CARRIED FORWARD														

Form 57a: Record of Cash Received.

PAGE _____

RECORD OF CASH PAID OUT FOR THE MONTH OF 191

REIMBURSEMENTS	DATE	PAID TO	CREDIT	DEBIT											
			CASH	CUSTOMERS' ACCOUNTS	✓	CREDITORS' ACCOUNTS	✓	BANK	GENERAL EXPENSE	OFFICE	POSTAGE AND PHONES	FREIGHT AND EXPGE. DEP'T.	FREIGHT AND EXPGE. AMOUNT		MISCELLANEOUS AMOUNT	✓	MISCELLANEOUS ACCOUNT
		BROUGHT FORWARD															
		CARRIED FORWARD															

Form 57b: Record of Cash Paid Out.

ten thereunder in red or black ink; preferably, this writing should be in red if the bookkeeper is not fairly expert as such, inasmuch as the daily totals are cumulative—the previous days' total being added in with the receipts of today. Each day, the total of yesterday is deducted from that of today to secure today's receipts, the deduction being made in the space just at the left of the "cash" column.

Collections on customers' accounts are compared readily with the charge sales per Sales Abstract so as to keep the total of the customers' accounts from getting out of proportion to the amount of business done. Also, the total cash sales are checked easily against the cash sales on the Sales Abstract so as to catch errors before it is too late.

The Record of Cash Paid Out keeps a permanent and continuous record of all petty cash disbursements and sums deposited in bank from time to time. The "reimbursement" column is started with the Cash account balance on the day the system is opened. The receipts for the first day, for example, as per Record of Cash Received, are added to this balance. Then by deducting the total of the "cash" column on the Cash Paid Out Record, the amount of cash on hand at the end of the first day's business should be secured.

At the close of each day, or on the morning of the following day, all cash on hand for the day just passed, both in safe and in register, should be counted and be proved against the cash records. The Daily Cash Balance Slip is useful in this connection. When this form is completed, it may be attached to the Daily Statement to permit the proprietor to keep a constant check on his cash records. These two Cash Books are illustrated in Forms 57a and 57b.

VOUCHER CHECK[1] AND REMITTANCE MEMORANDUM

Frequently, the familiar form of check supplied by banks is discarded in favor of some sort of a Voucher Check; this

[1]See Chapter V, *ante*—Cash Payments: Modern Treatment.

may combine a Remittance Memorandum and a bank check. One illustration is offered in Form 58. It consists of two parts separated by a perforated line, the upper portion being the usual bank check and the lower one the Remittance Memorandum.

The forms come padded, each original sheet being fol-

FIRST NATIONAL BANK

HOLMAN MERCHANDISE CO.
THE BIG STORE

No. _____

_____ 19 ____

PAY _____ DOLLARS. $ _____

TO THE ORDER OF _____

_____ _____

_____

DETACH FROM CHECK BEFORE DEPOSITING IF NOT CORRECT PLEASE RETURN.
ABOVE CHECK IS IN SETTLEMENT AS BELOW

NO RECEIPT IS DESIRED

INVOICE			DEDUCTIONS		AMOUNT PAID	DISCOUNT		AMOUNT OF CHECK
DATE	NUMBER	AMOUNT	FOR	AMOUNT		%	AMOUNT	

Form 58: Voucher Check and Remittance Memorandum.

lowed by a duplicate which is primarily a plain sheet of paper so that the original and the duplicate cannot be interchanged. The use of the duplicate permits the sender to have available complete information as to the purposes of the checks issued. Its size, when folded at the perforation, should permit of the use of a Number 9 window envelope.

In connection with the Purchase Record, the face of each invoice was rubber-stamped so as to determine at any time exactly the department, and which page and line, carried the

entry. Therefore, when an invoice is paid, an entry should be made first on the Remittance Advice showing invoice date, department page and line, total amount, deductions if any, and net amount to be paid. Following this, the rate of discount and its amount are entered, and in the extreme right column appears the check amount.

CUSTOMERS' ACCOUNTS: CUSTOMERS' LEDGER

There are four methods in general use for keeping the customers' individual accounts:

1. Slip system
2. Ledger account system
3. Card system
4. Monthly statement system

The first method fundamentally contemplates filing sales slips by customers' names daily. The unpaid charges for each customer are placed in one package, the last check always showing the total owed. It requires about the same length of time to sort and file these tickets as it does actually to post the charges. Several devices are on the market for handling sales slips in this manner. The advantage of the scheme lies in the fact that for each customer the original tickets are kept together and that therefrom it is easy to determine how much each owes. But since the bills are given the customer when paid, past accounts cannot be referred to for credit information. Again, the monthly bills never are ready for mailing when the end of the month arrives; hence, where monthly statements are sent out, the method probably cannot be accepted as satisfactory.

When customers' accounts are kept in a Ledger, the latter should be a loose-leaf form arranged, generally, under an alphabetical plan.[1] The Ledger method affords a better means of securing credit information than does the slip system. The big disadvantage, however, lies in the fact that bills seldom are ready for mailing at the close of the

[1]See Chapter II, *ante*, on loose-leaf forms.

month unless duplicate accounts are kept—one in the Ledger and one on an itemized bill; but doubling the work to do this is hardly justifiable.

The card system is practically the same as that of the loose-leaf Ledger method. Cards may be changed—inserted or withdrawn from the file—much more quickly than Ledger sheets. The serious disadvantage of the card system lies in losing cards and in placing them in the file at the wrong place.

The monthly statement system probably is replacing the others more and more, so that eventually this will be used more than any other. At least, hereunder, a minimum amount of time is consumed monthly in getting out the bills. Each customer's account is kept in duplicate. The original sheet has a wide margin at the left for binding purposes, for the insertion of credit information, and so forth. To the right of the perforated line at the right edge of this margin are laid out the usual columns for debit and credit purposes. The duplicate sheet is blank and is the permanent record. The original is detached from the binder and mailed to the customer each month.

By using a manifolding pen and carbon-paper, one writing enters up the statement and the permanent record.[1] Pages can be kept readily in alphabetical order so that an index is unnecessary. By omitting the ruled horizontal lines, the pages can be written on a typewriter. Addressing envelopes for mailing bills is unnecessary since these pages, when folded, may be made to fit a "window" envelope. It seems unnecessary to offer an illustration of this form.

Since it is highly desirable to obtain daily proof of the work on the Customers' Ledger, it may not be amiss to suggest one means by which this is done. A heavy piece of wrapping paper is torn into strips about six inches long and two inches wide, these being sufficient to equal the greatest number of postings made to customers' accounts in a

[1]See Chapter VIII, *ante*—Suggest grades of writing and carbon-papers to use.

day. When posting to an account, a slip is inserted in the Ledger at that account, allowing one end to protrude at the top so that the account may be located again later.

When the postings have been completed, a sheet of paper is ruled with three columns—remarks, old balances, new balances. The Ledger is opened at the first account as indexed by a slip, and the day's opening balance is copied in the "old balances" column on the sheet. In the "new balances" column is entered the balance secured after the day's postings are completed. The same process continues with regard to the other accounts marked. Every credit balance, before or after posting, may be circled. After all balances have been entered upon the sheet, the two columns are added, and the "net old balances" total subtracted from the "net new balances" total; the remainder should equal that day's charge sales total per the Department Sales Abstract. If the two amounts check, the markers may be removed, since one is assured that no postings were made incorrectly and that old balances have been figured properly.

The cash postings are verified in a similar manner. When customers' payments are posted to the separate accounts, each page is marked with a slip as before. When all the cash postings have been made, the old and new balances are drawn off on a sheet ruled as above, and the difference agreed with the total of the amounts entered for the day in the Customers' Payments column of the Cash Received Record.

Permanent records of paid-up customers' accounts are maintained through the use of a filing cabinet. Whenever one of the statements in the Customers' Ledger is paid in full, it is removed from the Ledger and transferred to this file behind the proper guide letter, first being placed in a folder with a tab on which the customer's name is written. At the end of the year, all of these statements may be removed from these folders and be transferred to a cheap binder.

C.O.D'S[1]—WILL CALLS—EXPENSE

Frequently, the C.O.D. and Will Call sales slips are merely kept on a spindle until the full amount of the sale is collected. Losses hereunder are prevalent since with many of these tickets in existence some are sure to get lost; hence, the money they represent never reaches the cash drawer. Fundamentally, transactions of this kind may be passed through the sales each day, this simple expedient saving more in the course of a year than the small added cost of the extra work entailed.

A frequent source of loss occurs in connection with store expense where expense supplies are taken from stock—soap, brooms, and so forth—without a record being made. Every item taken from stock should find its way into the books and, to permit this, a Sales Slip may be made out for each such internal transaction. The idea hereunder is to secure an accurate cost of doing business, and to assist in reducing expenses by virtue of the fact that clerks will hesitate about dipping into stock where a record must be made for each article used. Some advocate, also, charging these items out at retail price even though the total thereby will be greater, so that the management will watch the balance of these more carefully than otherwise might be done.

The accounts with C.O.D. sales, Will Call items, and expenses as above described are kept in the Customer's Ledger, from which transfers to the General Ledger may be made monthly through a clearing entry. The account sheets for these transactions may be the same as those used in the General Ledger. It is unnecessary to maintain the regular duplicate sheet in this connection.

When there are a large number of C.O.D. and Will Call transactions, a separate section in the Customers' Ledger may be assigned thereto, or an entirely different book may be used. Perhaps it will be advisable to work out an entirely different scheme for handling such items.

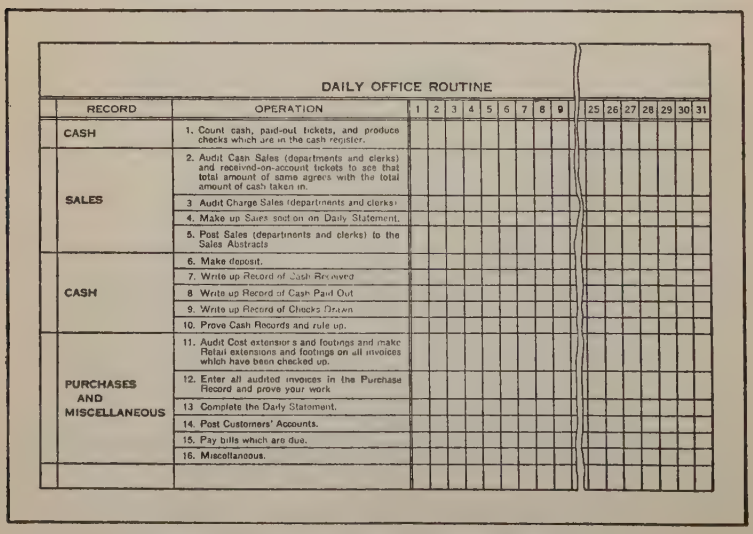
[1]Compare C.O.D. treatment with Chapter IV, *ante*—Sundry Sales.

LAYOUT OF OFFICE ROUTINE

The purpose of the chart offered as Form 59 is to indicate how one may be certain each day that the requisite work has been done in connection with the records of sales, cash, and purchases. On this chart are shown the successive steps required to keep properly the records upon which comment has been made. These three classes of records are listed in the left-hand column. The various subdivisions under these heads are displayed in the "operations" column in the order in which they are to be carried out. The columns at the right are for the days of the month. As the various details are carried out as listed in the chart, a check-mark is placed in the proper column on the correct line.

CORRECTED INVOICES

Frequently, changes are necessary in the amounts of invoices after they have been entered upon the Purchase Record, because of failure to detect errors on the original



DAILY OFFICE ROUTINE

RECORD	OPERATION	1	2	3	4	5	6	7	8	9	25	26	27	28	29	30	31
CASH	1. Count cash, paid-out tickets, and produce checks which are in the cash register.																
SALES	2. Audit Cash Sales (departments and clerks) and received-on-account tickets to see that total amount of same agrees with the total amount of cash taken in.																
	3 Audit Charge Sales (departments and clerks)																
	4. Make up Sales section on Daily Statement.																
	5. Post Sales (departments and clerks) to the Sales Abstracts																
CASH	6. Make deposit.																
	7. Write up Record of Cash Received																
	8 Write up Record of Cash Paid Out																
	9. Write up Record of Checks Drawn																
	10. Prove Cash Records and rule up.																
PURCHASES AND MISCELLANEOUS	11. Audit Cost extensions and footings and make Retail extensions and footings on all invoices which have been checked up.																
	12. Enter all audited invoices in the Purchase Record and prove your work																
	13 Complete the Daily Statement.																
	14. Post Customers' Accounts.																
	15. Pay bills which are due.																
	16. Miscellaneous.																

Form 59: Schedule of Daily Office Routine.

invoices until after they are entered on the record. When an invoice is corrected, one should refer to the Purchase Record to see how the entry was made. If it is found that the mistake was discovered before an entry was booked, then all that is necessary is to write across the face of the corrected invoice the words "deducted on original bill." But when entry is discovered in the Purchase Record, a new one must be made to correct, this correction being equal to the difference involved, and being covered by a Memo, either debit or credit in character, as the case warrants.

Sometimes a deduction is made which the wholesaler will not allow. Hereunder, the letter refusing the deduction should be entered as an invoice.

One cannot well go wrong if the attitude adopted is that every transaction pertaining to the cost of merchandise must go through the Purchase Record.

MERCHANDISE TRANSFERS[1]

Transferring merchandise from one department to another must be so handled that the records will not be thrown out of balance as a result. For such purpose a Merchandise Transfer form may be used. This is prepared in duplicate, the forms being numbered consecutively. Every transfer should be made at both cost and sales prices.

These forms or tickets are filed until the end of the month. Then the originals are separated from the duplicates. The originals are sorted by departments to be charged, and the duplicates by departments to be credited. By combining the cost and retail totals of the chargeable departments, the grand total of the transfers is secured; this should correspond with the grand total of the totals of the departments to be credited. The mark-down on merchandise which is transferred in less than first-class condition should be borne by the department making the trans-

[1]Review Chapter VII, *ante*—Internal Transactions.

fer; hereunder, also, the cost price must be reduced so that the department to which the merchandise is transferred can show a profit on the goods after they are sold.

This Merchandise Transfer form requires no specific illustration. It may be in size about 8½ by 11 inches. In the heading are shown the date and the department to be charged. The body of the form may be columned from left to right about as follows: Selling Price, Selling Price Extension, Kind of Merchandise, Quantity, Cost Price, Cost Extension. At the foot of the form there should be shown the department to be credited, and the name of the person authorizing the transfer.

PURCHASE STATEMENT

This is a monthly list of purchases by departments. When complete, the statement will show at cost and retail prices all purchases for the month for each department. After the last entry is made, the columns should be added—cost and retail. Then from the "sundries" section in the Purchase Record, there should be taken the items according to accounts to be charged—as Furniture and Fixtures, and so forth—and these should be entered only in the "cost" column in the lower half of the statement. The final total of this column should equal that shown on the last proof of the Purchase Record after the last lot of bills for the month has been entered in the latter record, plus the total amount of cash purchases as entered in the Purchase Record.

The form for this Purchase Statement may be ruled in a number of ways, but the following will suffice: In the upper half there are columns for Charge, Cost, Retail, and Percentage Marked; half-way down the sheet is a heavy ruled line immediately under which is the term "Total Merchandise"; below this is the space for miscellaneous entries and amounts, so that at the foot of the sheet there may be shown the "Total."

THINGS TO BE DONE	CASH RECEIVED	CASH PAID OUT	BANK RECORD	PURCHASE RECORD	SALES RECORD	JOURNAL	STOCK LEDGER	PAY-ROLL	PRIVATE LEDGER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1. Prove Deposits	X	X	X																		
2. Sort Canceled Checks			X																		
3. Reconcile Bank Account	X	X	X																		
4. Prove Cash Records	X	X																			
5. Checks for Cash	X	X	X																		
6. Rule Cash Records	X	X	X																		
7. Cash Sales	X				X																
8. Department Sales					X																
9. Clerks' Sales					X																
10. Cash Purchases		X		X																	
11. Department transfers				X			X														
12. Purchase Statement				X		X															
13. Purchases to Stock Ledger				X			X														
14. Sales to Stock Ledger					X		X														
15. Mark-Downs to Stock Ledger							X														
16. Stock Ledger Debits							X														
17. Stock Ledger Credits							X														
18. Retail Balances							X														
19. Average Per Cent Mark-up							X														
20. Stock at Cost							X														
21. Charge Sales					X	X															
22. Waste Sales					X	X															
23. Stamp Account						X															
24. Cost of Sales						X	X														
25. Pay-Roll						X		X													
26. Loss on Bad Accounts						X															
27. Depreciation—Building						X															
28. Depreciation—Furniture						X															
29. Depreciation—Delivery						X															
30. Insurance						X															
31. Taxes						X															
32. Supplies						X															
33. Proprietor's Salary						X															
34. Rent						X															
35. Interest						X															
36.																					
37.																					
38. Rule Journal						X															
39. Post Private Ledger	X	X	X			X			X												
40. Take Trial Balance									X												
41. Make Balance Sheet									X												
42. Make Profit and Loss Statement									X												
43. Make Department Statement				X	X		X	X	X												

Form 60: Schedule of Monthly Office Routine.

MONTHLY ROUTINE CHART

At the end of each month, it is necessary to strike a fairly fast pace if the books are to be closed in anywhere from two-thirds to one-half of the time normally required; the work must be done in a systematic and orderly manner. The purpose of the present chart, Form 60, is to enable this to be done; in certain respects, this chart is similar to the Daily Routine Chart offered in Form 59, but in others it is an improvement thereover.

The chart is divided into three sections. In the first are listed the things to be done—43 operations being shown. In the middle section, the names of the various records are written at the top; below, are columns holding a miscellaneous assortment of cross-marks. These crosses show what records are to be consulted in taking the various steps listed in the left-hand section. The last section at the right requires no comment.

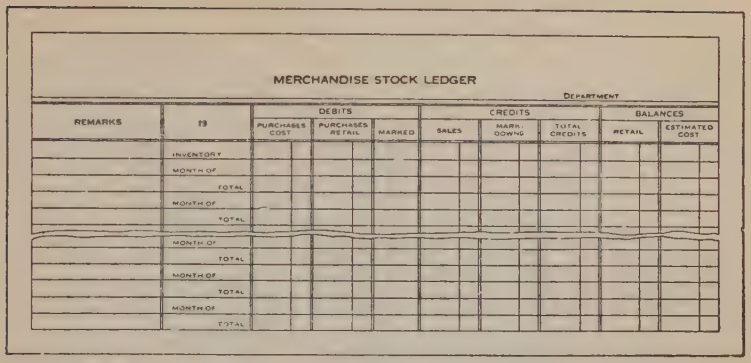
INVENTORY: STOCK LEDGER[1]

The Stock Ledger is written up from various sources of information—the Monthly Purchase Statement, the Summary of Merchandise on Hand for each department when the system was installed, Department Sales Abstract, the Mark-Down Record, and so forth. A sheet, as illustrated in Form 61, should be kept for each department, as well as an additional one to carry the totals of all departments. Naturally, after the Stock Ledger has been opened, the postings made subsequently thereto are monthly only. Each "Total" line may be written in, in red ink.

The average percentage of mark-up is secured by subtracting the cost total from the retail total, and by taking the resulting amount of mark-up and dividing it by the retail total.

The percentage of mark-up deducted from 100%, re-

[1]Compare with forms illustrated in Chapter III, *ante*.



MERCHANDISE STOCK LEDGER

DEPARTMENT

REMARKS	19	DEBITS			CREDITS			BALANCES	
		PURCHASES COST	PURCHASES RETAIL	MARKED	SALES	MARK-DOWNS	TOTAL CREDITS	RETAIL	ESTIMATED COST
	INVENTORY								
	MONTH OF								
	TOTAL								
	MONTH OF								
	TOTAL								
	MONTH OF								
	TOTAL								
	MONTH OF								
	TOTAL								
	MONTH OF								
	TOTAL								

Form 61: Merchandise Stock Ledger.

sults in the figure to be used in calculating the amounts to go in the "estimated cost" column at the right, for each department sheet. On the "Total" sheet, however, this column is filled in from the totals of the department sheets, rather than by a percentage calculation, because of inaccuracies in the latter method which will not permit all figures to check out—departmental and total.

TAKING THE INVENTORY[1]

This is an important piece of work, inasmuch as the stock on hand represents the largest single asset held by most merchants. The inventory in any store should be taken on loose sheets, never in bound books. The sheets for each department should be prepared in advance by having the heading written in and the sheets numbered consecutively for each department. Even if a store never has been departmentalized, for inventory purposes, such separation should be made.

The merchandise to be inventoried is separable into three classes:

1. Goods that must be measured or weighed;
2. Piece goods;
3. Goods that come in boxes.

[1]Review inventory-taking method shown in Chapter III, *ante*.

The grocery department is a fair example of a department holding goods of the first kind. The department may be divided roughly into sections, each of which is to be inventoried separately. The location of each section should be marked on the Inventory Sheet. The results are indicated on the sheet as the count progresses, the sheets being pinned to the counter or shelf so that deductions may be made easily as goods are sold. There will be but little interference in the sale of goods if this procedure is followed. When the inventory is to be closed, the sheets are collected and the extensions figured.

Bolt goods must be measured. A measuring chart may be used to facilitate the work, but the results therefrom probably will not be accurate. If accuracy is desired, each bolt may be unwrapped and the goods measured from the inside end. At each five-yard point, a marker is placed showing the number of yards to that point. Hence, when the inventory is to be closed, it is necessary only to unwrap the bolt up to the first mark and then measure from that mark to the outside end of the piece.

Goods which come in boxes, as hosiery, are counted, and a strip of paper showing the number of pieces and the price is stuck in the end of each box. Deductions are made thereon, so that when the inventory is closed, only the totals need be read off.

Piece goods are best inventoried by the "tally" method. Regardless of design or pattern, all articles of the same price which are intended to sell at the same sales price are bulked.

The inventory should be figured at both cost and sales prices, in order to check the profit possibilities of any department. The inventory should be taken at the first of some calendar month to avoid unnecessary complications. Although it is possible to maintain a perpetual inventory, and many concerns do so, probably the trouble of keeping it and the ever-present inaccuracy outweigh, in general, its usefulness.

JOURNAL[1]

This record primarily provides a special form for the monthly adjusting entries, by means of which amounts are transferred from one account to another. The entries herein relate to such matters as:

1. Purchases
2. Sales
3. Transfers
4. Merchandise Stock
5. Pay-Roll
6. Expense Apportionment
7. And so forth.

Whenever an entry cannot be allocated to any one of the other special records of original entry, it is safe to assume that the Journal is the proper form upon which such entry should go.

The usual type of six-column Journal should prove to be entirely satisfactory (see Chapter II, *ante*).

MONTHLY STATEMENTS: ENTIRE BUSINESS

After the current transactions for a month have been entered up, the account balances checked for accuracy, and the monthly adjustments completed, the point is arrived at where the monthly statements may be prepared. The first step in this connection is to draw off a Trial Balance. Undoubtedly, the simple two-column form is used in this connection more than any other, inasmuch as all that is desired is to secure a test or check by means of which it is ascertained whether or not the General Ledger is in balance. Some bookkeepers, however, follow the practice of laying out the Trial Balance on a so-called "work sheet" form—the first two columns at the left holding the Trial Balance figures, the second pair at the right the Profit and Loss items, and the last two columns at the right the Balance Sheet amounts. No criticism can be offered as to this

[1]Compare with forms and comment in Chapter II, *ante*.

method, provided it is realized that such a sheet is not a statement to be submitted to the management, and provided the bookkeeper has a sufficient knowledge of bookkeeping principles to realize the fact that the average store owner cannot interpret the information thereon if it is left in such form only.

In other words, the Trial Balance being in agreement—as to debits and credits—it is essential that the monthly Balance Sheet and Profit and Loss Statement be prepared. Illustrative forms for these two statements appear unnecessary, inasmuch as they are fairly standard in character. The Profit and Loss Statement should be so columned that percentages may be shown thereon, as:

1. Rate percentage of gross profit. This is secured by dividing total sales into gross profit.
2. Rate percentage of cost of doing business. This is obtained by dividing the total sales into each item of expense shown.

Further, the Profit and Loss Statement should be divided, from left to right, into three amount sections: Cumulated Balances to Date, Balances Last Month, This Month.

EXPENSE DISTRIBUTION[1]

The preparation of the Profit and Loss Statement monthly for the business as a whole is satisfactory for pointing out whether or not something relative to operation is amiss, but it will not indicate which departments or lines are responsible for holding back business progress. Assuming, for example, that the month's gross profit figure apparently is satisfactory, but that the net profit amount for such period is practically nothing, it is necessary to make a most careful analysis of the figures to determine where the trouble lies. Inasmuch as one's suspicions naturally will fall upon certain departments, the value of which as money-makers is in doubt, this analysis primarily is a departmental one. Yet before any conclusions can be drawn, it is necessary

[1]Review Chapter VI, *ante*—Overhead.

to distribute expenses departmentally in order to get at the facts.

To assist in locating the unprofitable departments, a Monthly Tabulation of Expenses is utilized. In connection herewith, to each department one must charge, first, the expenses directly allocatable thereto—as Salaries, Freight, and so forth. The other departmental expenses must be estimated—such as Advertising, General Expense, and so forth. The distribution of this second class of expenses presents a problem of fair proportions, some merchants going so far as to insist that no equitable basis of allocation to departments exists. Nevertheless, it is possible to secure a distribution both impartial and fair.

In filling out the Monthly Tabulation of Expenses, it seems to be the practice first to enter the column totals, say, as found in the Profit and Loss Statement. Then, whatever distribution is made, the detail thereof must agree with these entered totals. The department names are written in order in the column provided therefor. A column is found for each expense which can be distributed on a fairly definite basis. A "General Expense" column holds the other expenses which cannot be distributed directly.

Where clerks sell only in one department, unless otherwise ordered, the salary expense is distributed readily. Where a clerk sells in any department, the distribution depends upon the manager's estimate, or upon that of some one else, as to the proportionate amount of time spent in each location; this cannot be standard for all stores, inasmuch as each must be treated separately. Basically, the idea is to determine first what percentage of the total payroll is necessary to sell each line. And such percentage, generally, ought not to remain constant, inasmuch as a decided increase in the sales volume in a particular department is fair evidence that such department should bear a larger proportion of selling expenses than formerly.

Where traveling or buying expense amounts to a considerable item, it should be charged to the departments which

incur it. If one buyer purchases for a number of departments, he may estimate how much of his time was spent in the interest of each one, or it may be that each such department is charged an equal amount therefor.

The allocation of freight charges depends upon the viewpoint taken, some maintaining that these are part of cost of sales and others insisting they are merely expenses. If called part of cost, shipments generally are held longer in the receiving room so that the proper apportionments may be made before the goods go on the floor; if considered as an expense, it is assumed that the goods reach the floor quicker. In a particular case, therefore, the solution may be assumed as a matter of choice, inasmuch as in either event the margin of net profit and the percentage of net profit will be identical.

The information disclosed in the Freight and Express section of the Cash Paid Out Record is recapitulated by departments; then the same is done with payments therefor made by checks as shown by the Record of Checks Drawn. If these segregated totals then strike with the amount at the bottom of the Expense Tabulation, the freight and express items for each department may be apportioned.

Newspaper advertising may be distributed partly in accord with the space allotted departments in each ad layout. That which represents headline and signature space may be prorated upon the basis of space allotted the departments in each ad run. General publicity advertising is distributable according to sales. But under any method of distribution, excruciating accuracy is to be discouraged, inasmuch as all distributions are estimates at best; hence, it may be sufficient to distribute all advertising upon the basis of sales. Should a particular department be maintained, not for profit, but to help increase sales in other departments, such department should not bear any advertising expense—it is an advertisement itself.

Rent may be charged according to sales or to purchases;

yet such methods seem grossly in error, it being much better to apportion this item according to space occupied and the relative value of such space, each store being a problem unto itself. Insurance and taxes are distributed on the amount of stock in each department. All general expense which can be handled directly as departmental should be so treated, so that the amount to be prorated may not be so large. Part of this expense is controlled by the amount of goods sold in each department—as delivery expense. Another portion is governed by the amount of goods bought—as probably office expense related to the purchase procedures. Again, the department which carries twice as much stock as another may be required to carry a proportionate amount of management expense.

The Monthly Tabulation of Expenses may be merely a sheet of analysis paper headed from left to right about as follows: Department, Salary, Percentage to Sales, Traveling Expense, Freight, Advertising, Rent, Insurance and Taxes, General Expense, Total, Percentage to Sales. Again, it may assume the form of an Apportionment Journal in which the charges are entered in the left-hand column and the distributions of these charges in the columns to the right, each of which carries a department designation.

MONTHLY DEPARTMENTAL PROFIT AND LOSS STATEMENT

In order to ascertain which departments are paying a profit and which ones are not, a Monthly Departmental Profit and Loss Statement must be prepared for this purpose. Such a statement may be set up in a variety of forms, but perhaps a simple one indicated as follows will be sufficient: From left to right across a sheet of analysis paper the following column headings are placed—Department, Stock Opening, Stock Closing, Change, Purchases, Cost of Sales, Sales, Gross Profit, Percentage to Sales, Net Profit for Month, Percentage to Sales, Net Profit to Date.

ANNUAL PROFIT AND LOSS FIGURES

In order to know the total amount to date each year of each kind of expense charged to each department, and what has been the progress for all months of each year to date, two cumulative yearly forms are utilized:

1. An Annual Tabulation of Expenses Sheet. This is ruled similarly to the monthly form, one sheet for each department, and one for the totals.
2. An Annual Profit and Loss Statement. This is ruled exactly like the monthly form, one sheet for each department, and one for the totals.

Inasmuch as only 12 lines are necessary for each of the above forms per department, one for each month, for each department both forms may be placed upon one sheet of paper.

MERCHANDISE STOCK PLAN[1]

A purchase control plan may be adopted with success in practically any retail business. The underlying feature is to fill out properly the plan sheet illustrated as Form 62, one form being prepared for each department.

When a system is first started, the first three percentages to be entered in the upper left portion of the form are not available, unless reference is possible to adequate past records. In the years which follow, the figures will be taken from the records. In the beginning, the retailer decides upon an arbitrary percentage of mark-up as high as he can reasonably expect the customers to pay; the next year, this percentage does not need to be at all arbitrary.

These stock plans are prepared at the beginning of each year when the inventory is taken and when the stock on hand in each department is known. The first step is to write in the department letter or number on the top line and then note the period that the plan is to cover; next, the figures in the top left-hand corner should be entered.

[1]Review Chapter XII, *ante*, on Stock Plan.

MERCHANDISE PLAN

COST OF DOING BUSINESS ..... _____%
NET PROFIT DESIRED ..... _____%
ALLOWANCE FOR MARK-DOWNS ..... _____%
MARK-UP REQUIRED ..... _____

DEPARTMENT _____
PERIOD, FROM _____
TO _____

STOCK BEGINNING OF YEAR .. $
STOCK TO BE END OF YEAR .. $ _____
INCREASE—DECREASE $
COST OF SALES ..... _____
POSSIBLE TO BUY THIS YEAR..... $

	MONTH	PURCHASES LAST YEAR	PURCHASES ALLOWED	SALES LAST YEAR	STOCK END OF MONTH	
	TOTAL					
				STOCK BEGINNING OF YEAR.....		
				TOTAL OF ALL STOCK BALANCES...		
				AVERAGE STOCK (DIVIDED BY 13).....		

Form 62: Merchandise Stock Plan.

Following this, the body of the plan sheet is filled out; most of the information required needs no explanation. If the stock at the beginning of the year in Department A is $1,350, and if it is decided to reduce this inventory $75, the "stock to be end of year" is $1,275, this amount being entered as necessary. When the total of the column "sales last year" is secured, it is an easy matter to determine

the cost of sales amount based upon the percentage of mark-up.

The amount possible to buy during the new period is determined readily, provided the sales are to be no greater than the sales of the last period. If the stock is expected to decrease during the year, the desired decrease is subtracted from the "cost of sales;" if the desire is to increase the stock, then the desired increase is added to the "cost of sales." After the amount which it is possible to buy for the coming year has been found in this manner, the quota should be entered in two places—the "possible to buy this year" line, and at the bottom of the "purchase allowed" column. Next, this amount is split up to find out how much merchandise may be bought each month; in order to have on hand merchandise in plenty of time for advance showing, a department's quota is divided monthly according to last year's purchases, rather than in equal portions. Whenever the allotment for a month is not entirely used up, the excess may be included with next month's quota. But if a month's portion has been exceeded, the amount of such excess must be deducted from succeeding months.

If sales do not increase, the total amount placed in stock in a department during the year must be kept within the estimated figure, and in this connection the "stock end of month" column will provide a monthly guide. If the sales volume during the coming year does increase, the purchase allotment may be increased by an amount equal to sales increase less percentage of mark-up.

In a new business, where figures are not available for the preparation of this plan upon past results, estimates may be used, or, what is probably better, during the first year nothing may be done beyond setting up a plan for the business as a whole, the departments not being considered for the time being.

As costs increase, it is usual to emphasize the need for an increase in turnover of capital. Each retailer should know

how many times he is turning his stock during the year, and how many times it was turned last year. Then the problem to be solved is to see that the rate of turnover each year is faster than the preceding year. Fundamentally, this can be done only by maintaining stock at the same point as last year and then increasing sales volume. To recapitulate the meaning of two terms already offered, the following results:

1. *Turnover:* Beginning inventory plus purchases less ending inventory. What was paid for the goods sold is cost of sales, and this is turnover.
2. *Rate of Turnover:* The number of times the stock was turned in a year is secured by dividing sales at cost by the average stock at cost. The more stock balances used in figuring average stock, the more accurate will be the result.

The Merchandise Plan sheet is offered in Form 62.

RECORD OF ORDERS PLACED

This form acts as a check upon the purchase plan, in that it permits one to control his purchases beforehand—prior to the placement of orders—rather than attempting to do so when it is evident that surplus stocks are piling up. Its purpose is to make overbuying as difficult as possible.

The form consists merely of a columnar sheet, one for each department, headed across the top:

Date
Creditor's Name
Amount
January
February
March
April
May
June
July
Future Months
Future Amounts

After the headings have been inserted, the form becomes a record for future delivery. Inasmuch as orders seldom are placed twelve months in advance, a form that will take care of six months or so at a time will suffice, provided two columns at the right are reserved for future orders placed for delivery beyond the last month for which a column is separately provided. In the middle of the year, for example, when the record for the remaining months is begun, entries in these columns may be posted to the proper month column of a new sheet.

After the purchase plan has been examined, on each department page above the name of each month is written in red the amount of purchases planned for the department during that month, the figures coming from the "purchases allowed" column of the plan. Whenever an order is placed, the information called for is written in, the amount of the order being entered in the column of the month in which it is to be delivered. This record always should be consulted before a large order is placed.

ADVANCE SALES REPORTS

The purpose of this form is to approximate, in advance, what the sales should amount to for a given period. In this manner, standards may be set for the various departments, so that one may see conclusively how closely they come to securing the desired results. The figures for the past year furnish the basis of this report. In form, this consists of a weekly sheet headed from left to right about as follows: Department, Days of the Week in Detail, Total. For comparative information, the figures in each column should be compared with those of the same day of the week last year—as Monday of the first week this year with Monday of the first week last year. The figures for last year are inserted in black ink, whereas those for the current year are put in with red ink. Sheets may be made up

in advance for as many weeks as may be desired, after which they may be sent to the bookkeeper whose duty it is to enter the current figures thereon day by day, in red, directly above the black ones of the past year.

WEEKLY MERCHANDISE STATEMENT

This permits one to measure the amount of goods actually received from month to month. Comparisons of stock balances may be made against sales and purchases, and a comparison of sales of last year with those of this year.

WEEKLY MERCHANDISE STATEMENT

DATE _____ 191_

DEPARTMENT	STOCK FIRST OF MONTH	PURCHASES FOR MONTH TO DATE			SALES FOR MONTH TO DATE	STOCK ON HAND NOW	SALES FIRST OF YEAR TO DATE	
		COST	RETAIL	%			THIS YEAR	LAST YEAR
TOTAL								

Form 63: Weekly Merchandise Statement.

The form supplements the Stock Ledger, and being a weekly record, its use enables errors to be determined and corrected at once. This statement is illustrated in Form 63.

MONTHLY TURNOVER REPORT

Turnover has been referred to from time to time above. The term itself may be applied on any one of three ways:

1. Turnover means cost of sales, or wholesale cost of goods sold.
2. Rate of turnover means the number of times average stock may be divided into the cost of sales.
3. Time of turnover means the number of days it takes to turn all of the stock in the store, or in a department, one time.

A monthly report may be prepared of the time of turnover in the various departments.

This Monthly Turnover Report is a rather simple one, so far as the ruling is concerned. The columns from left to right across the page would be:

Department
Stock End of Month
  This Year
  Last Year
Days to Turn
  This Year
  Last Year
  Desired

The columnar totals are shown at the foot of the sheet.

To figure the number of days which it will take a stock to turn, the average daily sales for departments must be obtained. The Stock Ledger for any department will show what have been the total sales for the year to the end of the month for which the report is to be made out. This amount divided by the number of days which it took to sell the goods will produce the average daily sales. The amount of stock at retail on hand in each department, at the end of the month, divided by the average daily sales, will result in finding the number of days it will take to sell it—provided the sales volume is maintained at the same rate.

CLERKS' SALES REPORTS

Previously, comment was made concerning a daily and monthly check-up on clerks' sales. To be most useful, this information should be accumulated so that it may be

CLERK'S SALES REPORT						CLERK'S STANDING		
MONTH OF _____ 191						MONTH OF _____ 191		
NO	CLERKS NAME	SALES	SALARY	%	STANDING	NAME	STANDING	

Form 64: Clerks' Monthly Sales Report.

referred to from time to time to determine how much each clerk has sold from the first of the year to date. Also, the percentage of their sales to their salaries is a useful figure to scrutinize. The monthly report referred to in this section is invaluable in showing this information.

The form is divided into two sections: the left part is for the management, and that on the right is to be torn off and posted where all clerks can read its contents. The portion which is for the employees' information shows merely the clerks' standing. Such a form may be an excellent aid in fixing salaries, rank, and so forth, but allowance must be made for the fact that, whereas some clerks will sell more goods than others, other clerks are better as salespeople and, hence, have a multiplicity of duties which may keep them away from the pure selling end.

At the end of each month, totals of the Clerks' Sales Reports should be transferred to an Annual Clerks' Sales Record. The Clerks' Monthly Sales Report is illustrated in Form 64.

OFFICE ORGANIZATION[1]

In concluding this chapter, brief comment is made concerning the office organization—particularly with reference to duties. In a store where one bookkeeper, or a cashier-bookkeeper, handles all of the accounting records, the matter may be ignored. But as soon as two persons or more are required to handle the book work, some thought must be given to the division of labor. In order to illustrate this feature, assume two possibilities as below, and note the attempted segregation of duties:

1. Two bookkeepers employed:
   (*a*) Sales and cash records; may assist with the customers' accounts;
   (*b*) Purchase, stock, and general records; also, supervision of cash and sales records.
2. Three bookkeepers employed:
   (*a*) Sales records;
   (*b*) Cash records and customers' accounts;
   (*c*) Purchase, stock, and general records (manager).

As the business expands, a further subdivision must be made from time to time. Probably the first revision would be to place one person in charge of customers' accounts and prohibit him any access to the cash records or the Journal. But regardless of expansion, the clerical force should be assistants to the main heads, working under the direction thereof, as:

1. Sales audit department head
2. Cashier
3. Purchase department head
4. Manager

CONCLUSION

It is presumed that the system described in these last two chapters can be applied to any retail business with little, if any, change. A very small business, for example,

[1]Compare with office portion of Chart No. 46, Chapter IX, *ante*.

operating entirely on a cash basis, requires probably little more than a cash register, a file of invoices, a simple Cash Book, Insurance Record, Journal in simple form, and one Ledger containing relatively few accounts. One that is a little larger, operating on a credit basis, may utilize some mechanical register system to record the sales transactions with customers, probably an Invoice Book to supplement the file, a three-column Cash Book, a six-column Journal, an Insurance Record, and a Ledger separated into three sections. Although there are wide differences between jewelry stores and grocery stores, the fundamental elements are alike. Local conditions may require the making of certain changes, but no difficulty should be experienced inasmuch as the apparent obstacles are inconsequential.

Departmentalizing makes it possible to pull out the facts about a business necessary for determining the location of errors. Even though one may not departmentalize to the fullest possible extent, it is profitable to subdivide any stock into the principal lines carried, so as to pick out those which do or do not cause a loss.

Criticisms of the above standardized system are to be developed by the solution of a problem included in the Laboratory Material for this chapter.

Test Questions

1. State some methods of prorating against departments the expenses of a department store. Indicate which one is the best to use, giving reasons.

2. What are the main features that you would endeavor to bring out in the Profit and Loss Statement of a retail business with several departments?

3. Given the following expenses, how would you distribute them among departments?

Insurance
Rent
Delivery Expense
Show-Window Expense
Advertising

General Administrative Expense

4. How would you verify the inventory of a department store?

5. Describe briefly a perpetual inventory system that will work satisfactorily in a department store.

Problems

(*a*) It is assumed that the principles and forms described in this chapter are utilized fully in the accounting system of the Bon Ton Store, mentioned in Problem (*a*) Chapter XII.

Prepare a report incorporating all recommendations you would make which you believe are an improvement over the present system. Confine yourself to just the phases mentioned in the chapter.

(*b*) The following departments are operated in a store which has approximately $25,000,000 sales each year:

Books and Stationery
Clothing—Men
Dry-Goods
House Furnishings
Leather Goods
Shoes
Carpets and Rugs
Clothing—Women
Furniture
Jewelry
Millinery
Toilet Articles

Prepare for this company an Expense Apportionment Journal by the use of which the expenses may be distributed to the departments operated. Indicate on this sheet the basis of distribution accorded each item.

(*c*) From the following figures, prepare a table such as you would present to the management of the store concerned:

Cost of sales
Percentage of cost of sales
Gross profit
Percentage of gross profit
New inventory at end of month

Inventory, First of Month—January

Department	Cost Price	Retail Price
A	$12,045.87	$20,260.78
B	2,264.00	3,911.62
C	4,916.45	7,505.13

PURCHASES FOR JANUARY

Department	Purchases		Mark-down on Cost	Mark-up on Retail	Returned Cost	Purchases Retail
	Cost	Retail				
A	$260.25	$437.11	$10.15		$20.00	$32.50
B	259.34	419.74		$25.40		
C	303.72	458.26		27.25		

SALES FOR JANUARY

Department	Sales		Mark-down on Retail
A	$1,332.94	.....	$0.99
B	280.89	.....	2.49
C	909.09	.....	3.20

Depreciation of 2% is figured on the cost of all purchases.

(*d*) John Philips, late district manager of the Cole Tire Company, decides to start a business on his own account in selling automobile tires and accessories. He rents a building for $150 a month, under a five-year lease and, in order to place same in condition for use, expends $550 for rewiring, whitewashing, painting, and so forth.

The equipment of the place consists of the following:

(1) Salesroom: Tire racks, desks, safe, chairs, tables.

(2) Service station (This is to be conducted in the rear of the building, which has a rear vehicle entrance, for the purpose of assisting car owners with tire changes, and to do vulcanizing work): Vulcanizing outfit, air pump, desk, and chairs.

All these articles have been purchased at an auction for the lump sum of $250; at market prices, they are worth $650.

Three salesmen are to be employed on the outside in the selling of tires. Any customer originally secured by a salesman belongs at all times to such salesman; in other words, should a salesman's customer come into the office and make a tire purchase, the salesman who sold that customer originally is entitled to the regular commission on the sale made. Salesmen work only on a commission basis; commissions due are calculated weekly. Since the outside salesmen are interested only in the sale of tires, they receive no commission upon sales of accessories.

The service station at present is in charge of one man. No fee is charged for putting a new tire upon a car when the tire has been purchased in the place; otherwise, a fee is charged dependent upon the time involved. The vulcanizing work, for which a good field exists in this particular community will be done entirely upon a fee basis. It is expected that, in the course of a few months, the service station income will be considerable.

The sales office force consists of two persons who work only on the basis of a salary. One of these persons, in addition to the selling duties, will assume entire charge of the books and records, and will be assisted in this work by the second person.

Sales orders originate either from people coming into the office to purchase—a portion being repeat orders of customers originally secured by the outside salesmen, or from the salesmen's efforts out in the community. When a salesman personally secures an order, an order blank must be made out in proper form, one copy being left with the customer, one being sent into the office, and one being retained by the salesman. The same type of order blank should be used by the salesmen on the outside as by those in the office.

The great majority of tire sales will be charge sales under the terms: 5% discount, 1 prox. Cash tire sales come under the same discount ruling. Accessories are sold net.

Tires are purchased under discount terms of 5% discount, 10 prox. A perpetual inventory, by quantities, is to be kept of all tires and accessories handled. All racks and shelves in the salesroom are to hold a specific number of each size tire and of each other article sold. Replenishment of these racks and shelves is to be made as soon as possible after a sale has taken place; by knowing at all times the exact quantities on hand in the salesroom, a weekly inventory may be taken within a short space of time. The only quantities requiring a count will be those in the storeroom. No goods are purchased on consignment. Every purchase is to be backed up by a purchase order properly issued and signed by Mr. Philips.

All moneys received are to be deposited intact, and all payments, where possible, are to be made by check. Mr. Philips makes an initial deposit in bank of $1,800. All checks issued are to be made out by an employee and, after proper entry in the books, will be signed by Mr. Philips. Petty expenses are to be paid from a petty cash fund of $100, which is to be replenished monthly, if not sooner.

Monthly statements are to be prepared. Every tire sold carries a 7,000 mile guaranty and, if a customer does not secure the mileage guaranteed from a tire purchased, he is given a new one with-

out question or cost, upon return of the old one and his tire mileage record thereof, the factory standing the loss.

A large tire agency in a neighboring city, to help Mr. Philips get started, frequently will transfer a customer to him under the following arrangement: The agency makes sale, and fills the order; agency then bills Mr. Philips as if sale were made by the latter. Settlement hereunder is to be made each month.

Requirements:

1. Chart of general ledger accounts, properly classified, plus a brief description of how to handle those accounts which may be peculiar to this business.
2. List of books and forms used, with a brief description of how each is to be operated.
3. Rulings for forms from which postings are to be made. Rule these to scale, but omit specifications as to printing, ruling, and binding.
4. *Pro forma* monthly Balance Sheet and Statement of Profits and Income.
5. Opening entries and initial Trial Balance.

XIV

SELLING GOODS ON COMMISSION

Accounts. Records. Receiving Record. Consignment Record. Purchase and Expense Journal. Sales Tickets—Customers' Ledger—Sales Recapitulation. Account Sales—Consignment Clearances Journal. Cash Book. Other records. Laboratory material.

THIS simple system is intended to illustrate the fundamental principles that may be followed in a trading business which, in addition to selling merchandise in regular course, to some extent sells goods received upon consignment from others.

ACCOUNTS

These are separated into two groups:

1. The usual accounts any business would carry—depending upon its legal organization, whether or not the establishment properties are owned or rented, the system of interial check over cash, purchases, and so forth.
2. The accounts assumed as necessary because of the consignment feature. These are commented upon briefly below.

Cash—Consignors. This represents a bank account used to hold the cash received from sales of consignment goods, so that the responsibility therefor is shown clearly in one account rather than having such cash merged in the regular account of Cash—Regular. All such cash received is debited to this account. The cash control should be such that all cash received is deposited intact; therefore, entry in this account is equivalent to inclusion in a deposit. The credits to this account are differentiated as under:

1. All cash paid over to consignor;
2. Periodical transfers necessary to adjust the account to the

actual accountability in existence. Hereunder, the offsetting debit is to Cash—Regular, and the transfer is evidenced by a check drawn upon the account which is deposited then in Cash—Regular.

The balance, at least on each closing date, should represent collections to be accounted for to consignors; the balance is a current asset since the use of this account merely prevents this cash from being merged with the other cash on deposit.

Cash—Regular. This account corresponds to that of "Bank" usually found upon a set of books. Herefrom, the various expenditures are paid after incurrence. All cash should be deposited intact, based upon receipts, and all payments should be made by check. Naturally, in order to operate both bank accounts properly, deposits ought to be made daily, and these should be prepared so as to reach the bank prior to closing time each day; this means that after the daily write-up of the Cash Book, subsequent activity represents next day's business.

Finance Account. This account is credited monthly upon the basis of the Account Sales rendered during the interim, these latter first being entered in the Consignment Clearances Journal. In the latter is a column with the heading of "Consignment Proceeds," and from here the monthly posting is in order representative of proceeds due to be paid consignors. The account is debited from the payment side of the Cash Book for amounts paid to consignees, all such payments being by check. The balance herein, if any, should be a credit—a current liability. Accepted drafts drawn against the house are debited to this account as advances made, the offsetting credits belong to Notes Payable.

Charges. This account is debited monthly from the Purchase and Expense Journal for all expenditures on account of consignments received. It is credited monthly from the

Consignment Clearances Journal, entry having been made in the latter record from the various issuances of Account Sales upon which the effect is a deduction from total sales as thereon shown. The balance, if any, should be a debit representative of charges not yet deducted from sales; it is a current asset. Freight charges owed, say, to a railroad company, for consigned goods received, indicate the type of items to be charged to this account.

In-Freight and Cartage. This account records charges of two specific types:

1. Those applicable to regular purchases;
2. Cartage charges applicable to consigned goods where these have not been specifically taken care of as "Charges" (*ante*).

Therefore, when an Account Sales is prepared, care must be taken to provide for a clearance of the cartage charge involved if this has been passed to the account being commented upon at this point. This clearance is made monthly from the Consignment Clearances Journal so that at the end of a fiscal period the account balance applies wholly to purchases.

Insurance—Consignments. The use of this account arises through the desire of the consignee to insure himself to some extent from losing money due to bills not being paid; the seller must run the chance of loss from collections. For example: sales are made on terms of 2/10, n/30; therefore, if a bill is paid within 10 days, the effect is a reduction in receipts as against the Account Sales amount of sales made. When an Account Sales is prepared, in addition to transport cost entailed, commission and charges, all of which effect a reduction in net proceeds to be rendered consignor, a charge of 2% of sales (or more) is made to cover this item. Hence, the effect here, after an Account Sales is entered in the Consignment Clearances Journal, is to secure a credit against the Insurance—Consignments account. This

handling, in other words, really establishes the relationship of a *del credere* agency, since the seller assumes responsibility for collecting all accounts from customers who purchase the consigned merchandise, merging these with the accounts receivable resulting from sales of his own goods. Some would handle this particular phase of discount as an "insurance" item and provide the proper clearance therefor in the records so that it would show up eventually in the accounts as an income item.

Commissions Earned. The remuneration received for selling goods belonging to another person is a commission calculated as a certain percentage of sales. When an Account Sales is prepared, this commission is deducted, along with other charges, from the total sales accountability. This deduction is reflected by entry in the Consignment Clearances Journal from which, monthly, the above account is credited. The balance is an income item.

RECORDS

Some of the records used require no particular comment inasmuch as their purpose is general and they are utilized in no way specifically peculiar to this kind or type of consignment activity. Other records, however, are explained because of their effect upon the consignment feature. All records are loose-leaf.

Briefly, the records may be indicated as:

Journals
- General
- Purchase and Expense (with underlying analysis sheets)
- Sales Recapitulation
- Cash Book
- Consignment Clearances
- And so forth, as desired

Ledgers
- General
- Customers
- Creditors

Auxiliary
Receiving Record
Consignment Record
Account Sales
Sales Tickets
And so forth, as desired

RECEIVING RECORD[1]

The use of this book does not appear to be universal. But where found, it is merely memorandum in character, its purpose being to provide a record of consignments as received; correspondence between consignee and consignor so often is too meager to become the only basis for the making of book entries.

Upon the arrival of a consignment, the goods are checked against invoice, or whatever information is available concerning these goods. Next, each article or case is given a number which is marked thereon, this being the number assigned such consignment and, for a particular consignment, the number next in order following that allotted the last in-shipment.

The information necessary for inclusion in this book need not in any way be elaborate since, basically, it comprehends the following:

1. Consignment number;
2. Consignor's name and address;
3. Description of whatever was received;
4. Itemized listing of all charges paid or incurred in behalf of each consignment.

CONSIGNMENT RECORD

Next, in order, each consignment received is entered in this book. In form, this record need not in any way be elaborate. Each consignor is allotted a page herein. For a particular consignment, the page heading would be:

[1]Note differences between this type of Receiving Record and that where goods are bought outright—if any.

1. Consignment number;
2. Consignor's name and address;
3. The consignment contents are entered below against date of receipt; no values need be extended. The amounts of all charges incurred or paid should be shown in an inside column, and all credits, as they arise, should be placed in an outside column (both columns being, say, in juxtaposition to each other at the right of the page).

PURCHASE AND EXPENSE JOURNAL[1]

Inasmuch as the usual practice of a commission merchant is to sell goods on his own account, as well as those received from others to be sold on a commission basis, a Purchase Book is needed for this purpose. Further, assets and expenses of various kinds must be purchased. It is possible to draft a Journal record which will provide for the showing of all types of purchases therein. Such a form is indicated by the following suggested column headings:

Day
Explanation
Bill Number
Credit
  Accounts Payable
Debit
  Goods Accounts (by classes if desirable)
  Freight and Cartage Inward
  Charges—Consignment
  Selling Expense
    Account
    Amount
  Administrative and General Expenses
    Account
    Amount
  Sundries
    Account
    Amount
Payment
  Date
  Check Number

[1]Compare with Purchase Books in Chapter II, *ante*.

Although it is desirable for statement purposes to have available the components of selling and administrative expenses, it may be equally as desirable not to have the detail accounts therewith encumber the General Ledger. These two factors have been taken care of in the ruling submitted above. The General Ledger holds merely the accounts of: (1) Selling Expense; (2) Administrative and General Expense. The components are found upon underlying Analysis Sheets—one set for each of the above accounts. This principle has been explained in an earlier chapter.

SALES TICKETS[1]—CUSTOMERS' LEDGER—SALES RECAPITULATION

When a sale is made, an itemized Sales Ticket or Order Blank is prepared; each is given a consecutive number for entry purposes. The only fundamental difference between the usual variations in the ruling of the Sales Ticket and the ruling requisite in the present instance is that hereunder a column should be provided at the left of the form in which may be entered the consignment number of each unit sold, if such item or items concern consigned goods; otherwise, entry cannot be made properly in the Consignment Record. If a sale is made from regular stock, no consignment number is shown against the Sales Ticket entry therefor.

Upon the basis of the Sales Tickets, entries must be made in the following:

1. Consignment Record. Herein, the proper consignment account must be credited (entry made in the column at the extreme right);
2. Customers' Ledger. The total amount of each sale is charged to the correct customer's account contained herein;
3. Sales Recapitulation. The total amount of each sale is entered upon this form by Sales Ticket Number, day, name

[1]Compare with Sales Ticket in Chapter XII, *ante*.

and address, terms, and amount. At the end of each month, the totals from this sheet are posted to the General Ledger:

Dr. Customers' Accounts (Control)
  Cr. Sales—Consignment
      Sales—Regular

The suggested headings for the Sales Recapitulation Sheet are indicated below, one sheet per month:

Day
Name and Address
Terms
Sale Number
Debit
  Total—Customers
Credit
  Sales
    Consignment
      Consignment Number
      Amount
    Regular
      Amount

The Customers' Ledger requires but slight comment, if any. At times, this Ledger is kept upon the card system basis, as is frequently the case in other lines of commercial endeavor. Nevertheless, it is suggested that less trouble results in using a loose-leaf Ledger for customers' accounts, than in operating a card system in connection therewith.

Regardless of whether sales are made for cash or on credit, a Sales Ticket is prepared, given a number, and accounted for upon the Recapitulation. This practice has the effect of passing all sales through the Customers' Accounts (Control); hence, the total cash received daily from sales paid for at once (cash sales) must be so recorded in the Cash Register machine that their amount, when entered upon the Cash Book, will clear the Customers' Accounts (Control) of the corresponding amount. Such method of handling may be considered as unusual.

ACCOUNT SALES—CONSIGNMENT CLEARANCES JOURNAL[1]

When the goods of a particular consignment are completely disposed of, and at the end of each fiscal period, an Account Sales is prepared to be sent to each consignor for his information. Cash may accompany this statement or it may not; in the latter instance, the liability to consignors must be reflected in the accounts (see Consignment Clearances Journal, column "Personal Accounts—Cr").

In preparing the Account Sales, one turns first to the Consignment Record and to the particular consignment account therein that is wanted. The column at the right holds the various sales in itemized form; these are entered upon the Account Sales. The column to the left of the one just mentioned holds the various charges paid or incurred in behalf of the consignment. These should be increased by entry of the insurance item and by entry of the commission charged for selling the goods; then all of these charges are copied upon the Account Sales. Total charges deducted from total sales results in the figure representing net proceeds due, same to be credited from the Clearances Journal either to Finance or to a Personal account. After the Account Sales is completed, the consignment account then should be closed.

Based upon the facts displayed in the Account Sales, entry is necessary in the Consignment Clearances Journal. The suggested column headings for this record are:

Day
Consignment Number
Explanation
Total
Debit
  Consignment Sales
  Purchases
Credit
  Consignment Charges
  In-Freight Charges

[1]Why is this a Journal? See Chapter II, *ante*, for reasons.

Insurance
Commission Earned
Proceeds
  Finance Account
  Consignors' Personal Account

CASH BOOK[1]

The suggested column headings seem sufficiently explicit to indicate the handling of this record, without explanation in detail:

Cash Receipts
  Day
  Explanation
  Credits
    Notes Receivable
    Folio
    General Ledger
    Customers
  Debits
    Sales Discount
    Cash
      Regular
      Consignment Number
      Consignment
    Bank
      Regular
      Consignment

Cash Payments
  Day
  Explanation
  Debits
    Notes Payable
    Folio
    General Ledger
    Creditors
    Charges
    Liability to Consignors
  Credits
    Purchase Discount
    Bank
      Regular
    Consignment—Finance Account
  Check Number
  Bill Number

OTHER RECORDS

Records other than the above, which may be utilized to advantage in the present situation, require no specific comment other than that care must be observed to provide the columns necessary to the particular controls involved. Such would be the Note Register, the Petty Cash Book, the Insurance Register, and so forth.

In certain cases, the matter of returnable containers may require consideration. In such event, it would seem that the

[1]Compare with Cash Book mentioned in Chapters II—V—VII, *ante*.

simplest expedient to adopt would be to open a Returnable Containers account which is charged for the cost of the containers received, and which is credited for whatever is received from their sales. Hereunder, should containers be shipped to a consignor, as will happen at least occasionally, the Consignment Clearances Journal should carry a credit column thus titled so that the proper adjustment may be made therefor when the Account Sales is rendered. When this account is adjusted against inventory periodically, the balance, if a credit, is an income item; whereas, if a debit, it is an expense.

Test Questions

1. How do the accounts of a commission business differ from those of a merchant?

2. Wherein do the books of a commission business differ from those of a merchant?

3. What must the books of a consignee show relative to the following:

   Each consignment received
   Customers' accounts
   Assets
   Liabilities

4. At the close of each fiscal period, how should consigned goods appear in the statements of the consignee?

5. State two ways of treating consignments inward, when goods are to be sold subject to commission at the price at which they are consigned. Which method do you advocate, and why?

6. When is a consignee liable for losses, and when not?

7. On what theory would you proceed to open a set of accounts for an agent?

8. List the books of account and the principal accounts of a cold storage business.

Problems

(*a*) Upon the basis of the facts presented in this chapter, prepare a chart of the records and forms related to consignments, showing detailed rulings for each and include the necessary arrowed lines which indicate flow of entries from one record to the other or others.

(*b*) Devise a chart of accounts for a fruit growers' exchange.

(*c*) A summary of the operations of L. Joseph, operating under the name of the Paradise Silk Mills, is as follows:

(1) The Morgan Silk Mills consigns to Paradise Silk Mills which, in turn, assigns to A. Krueger. Krueger sells the merchandise and receives 4% of sales price, to cover shipping, and so forth, exclusive of interest and telephone charges incurred by him which are paid by Joseph. Next, Krueger receives from Paradise Silk Mills information concerning the mill charge covering price of goods sent him by Paradise Silk Mills so that he can remit periodically to the silk mill the cost of the goods sold by him deducting therefrom 2%, which represents his profit. When the mill has received the periodical settlement of Krueger, in turn, it renders a statement to Paradise Silk Mills, enclosing a check to cover the commission earned by Paradise Silk Mills thereunder. The goods in question consist of silk yarn which, when it comes from the final mill operation, is in skeins. Before shipment to Paradise Silk Mills this skeined yarn is balled and the balling cost is charged against Paradise Silk Mills, being kept separate and later billed to Paradise Silk Mills as part of the cost of the goods.

(2) A second concern selling for Paradise Silk Mills, is Condax and Company. Goods are consigned to Paradise Silk Mills by the mill as usual, which is responsible thereto. Paradise Silk Mills then sends them to Condax Company, which sells on the basis of a commission. No balling charges are involved, in that Condax and Company sells only skeined yarn.

(3) A third concern involved in the activity of Paradise Silk Mills is the Wolf Novelty Company. Goods are consigned by the mill to Paradise Silk Mills as usual, but shipped direct from the mill to the Wolf Novelty Company. Paradise Silk Mills pays the factory. Balling charges are involved as shown above.

In connection with the above three major accounts, invoices are received from the Morgan Silk Mills by Paradise Silk Mills. Balling charges are invoiced separately.

Upon the basis of the above information, prepare complete plans covering the installation of a simple system of accounts for the Paradise Silk Mills, including Chart of Accounts with definitions, records, and statements.

The Paradise Silk Mills occupies one medium-sized room in

a loft building on a rental basis, has one clerk besides Mr. Joseph, a small amount of furniture and fixtures—desk, chairs, tables, shelving, and display fixtures—and its expenses are those you deem necessary under the conditions indicated.

XV

SUMMER HOTELS

Chart of Accounts. Room reservation and guests' arrival procedure. Customers' (guests') Ledger. Charge Slips. Purchases and stores. Cash records. Sundry forms and records. Reports and statements.

THIS chapter relates to the system principles presumably underlying a summer hotel activity. An enterprise of this character opens its doors each year in May or June and closes them about November 1.

Up in the mountains of one of the eastern states are located two of these hotels. They are both of about the same size, accommodating, say, up to 500 guests. The activities of each are somewhat similar. In this chapter it is proposed to present at least the fundamental principles of the system operated in each case. In certain particulars, similarities between the two systems are noticed; whereas, in others, dissimilarities are seen.

It is to be borne in mind in the present connection, as well as in those which have been mentioned previously and in those to follow, that no two establishments are alike in all respects; hence, as a general proposition, a plan perfect for one is most apt not to fit the other.

The plans herein outlined to some may appear fairly complicated and minute, and to others not sufficient in detail. Yet, for the particular cases in hand, these plans were presumed to be entirely adequate and satisfactory, at least by those for whom they were prepared.

For purposes of differentiation, the cases have been designated as Number 1 and Number 2. In each instance, the resort is sponsored by a club. To this resort each member may go, together with any friends or guests he may choose

to invite. Let it be assumed that in each case, the summer season commences June 1, and closes on November 1.

The living accommodations at each resort consist of one main club house and about 50 cottages scattered over a radius of half a mile. Some guests live in the main building, and the others inhabit the cabins; all of them eat in the main dining-room.

The members in each case elect annually a president, vice-president, secretary, and treasurer, all of whom serve without pay. The president appoints the manager, a full-time employee hired on a salary basis, who has complete charge of the resort. Each club is incorporated; all stockholders are known as proprietary members. No member is charged with dues until after he has spent one week at the resort. A person becomes a full-fledged member only upon the payment of a subscription fee, this varying in proportion to the size of his family. In each case, the situation as just described is decidedly similar; hence, no variations need be commented upon at this point.

Since the clientele is mostly of a permanent nature, reservations are booked for a certain definite period; for the most part, the same people come each year at about the same time for their annual sojourn. During the summer months, very little attention is given to transients, since practically all available space is occupied by the regular guests and their friends. Inasmuch as these friends may drop in for a day or so, as over a week end, care must be observed in each case to make certain that the proper charges are accumulated on the books relative to these "friends." Transient trade, however, is encouraged early in the summer and late in the fall, yet even at these times its volume is not excessive.

The sports and amusements at these resorts are similar to those found at other places; namely, golf, tennis, boating, bathing, fishing, hiking, walking, riding, driving, dancing, reading, radio concerts, bridge, musicales, and so forth.

In each of these resorts, the manager is extremely desirous of keeping at a minimum the complaints from members regarding errors in their bills.

CHARTS OF ACCOUNTS[1]

The Chart of Accounts, for case Number 1, is shown below:

CURRENT ASSETS

1	Cash in Bank
2	Petty Cash
3	Change Fund
4	Accounts Receivable
5	Inventory of Stores
6	Inventory of Gas, Oil, Grease, and so forth
7	Inventory of Cigars, Tobacco, and so forth
8	Inventory of Candy
9	Inventory—Miscellaneous

FIXED ASSETS

20	Land
21	Buildings
22	General House Furnishings
23	Rooms Furnishings
24	Dining-Room Furnishings
25	Laundry Equipment
26	Garage Equipment—including Taxis and Trucks
27	Boats and Boat-House Equipment
28	Machinery for Golf Course
29	Grill Furnishings
30	Store Furnishings
31	Other Machinery

PREPAID ASSETS

50	Unexpired Insurance
51	Unexpired Licenses
52	Prepaid Taxes

CAPITALIZED EXPENDITURES

60	China and Glassware
61	Linen
62	Silver and Cutlery

[1]Compare with charts in Chapters X—XI, *ante*, as to differences in major groupings and in the detail inclusions.

CURRENT LIABILITIES

70 Accounts Payable
71 Notes Payable

FIXED LIABILITIES

75 Mortgages Payable
76 Bonds

ACCRUED LIABILITIES

80 Pay-Roll Accrued
81 Taxes Accrued
82 Insurance Accrued
83 Licenses Accrued
84 Interest Accrued

RESERVE ACCOUNTS

90 Reserve for Depreciation of Buildings
91 Reserve for Depreciation of Bad Accounts
92 Reserve for Depreciation of Furnishings
93 Reserve for Depreciation on Machinery and Equipment

CAPITAL ACCOUNTS

95 Capital
96 Surplus
97 Profit and Loss

REVENUE ACCOUNTS

101 Rooms
102 Dining-Room
103 Laundry
104 Garage
105 Boats
106 Golf
107 Tennis
108 Grill
109 Cigars
110 Candy
111 Garden
112 Dairy
113 Ice
114 Miscellaneous
120 Discount on Purchases
121 Interest on Bank Balance
122 Cash Over
123 Cash Sales

EXPENSE ACCOUNTS

150 Rooms
151 Dining-Room
152 Laundry
153 Garage
154 Boat House
155 Golf
156 Tennis
157 Grill
158 Cigars
159 Candy
160 Garden
161 Dairy
162 Ice
163 Fuel
170 Management Salaries and Expenses
171 Office Salaries and Expenses
172 General Grounds Expenses
173 General House Expenses
174 Heat, Light, and Power
175 Laundry
176 Maintenance of Buildings
190 Interest on Mortgages
191 Cash Short

For Case Number 2, the Chart of Accounts is displayed as follows:[1]

1. FIXED ASSETS

11 Tangible
111 Land
112 Buildings
113 General House Furnishings
114 Rooms Furnishings
115 China and Glassware
116 Furniture and Fixtures
117 Linen
118 Silver and Cutlery
119 Cigar Counter and Equipment
11A Machinery
11B Office Furniture and Fixtures
11C Golf Links Equipment

[1]Point out similarities and differences of Case Number 2, as compared with Case Number 1.

2. Floating Assets

2111 Cash in Bank

21 Current
- 211 Cash
  - 2112 Change Fund
  - 2113 Petty Cash
- 212 Accounts Receivable
- 213 Members Unpaid Dues
- 214 Members Unpaid Assessments

22 Inventories
- 222 Restaurant Stores
- 223 General Stores
- 224 Cigars
- 225 Candy
- 226 Beverages
- 227 Golf Supplies

23 Deferred Charges to Profit and Loss
- 233 Prepaid Taxes
- 234 Unexpired Insurance

3. Fixed Liabilities

31 Mortgages Payable

4. Floating Liabilities

41 Accounts Payable
42 Pay-Roll (Accrued Salaries)
43 Accrued Taxes
44 Accrued Interest Payable

5. Proprietorship

51 Capital Stock
52 Surplus
53 Profit and Loss
54 Reserves
- 541 Reserve for Depreciation of Buildings
- 542 Reserve for Depreciation of Furniture and Fixtures
- 543 Reserve for Depreciation of Machinery
- 544 Reserve for Members' Doubtful Accounts

6. Revenues

61 Restaurants
62 Cigars
63 News-Stand
64 Rooms
65 Golf Dues

67 Beverages

7. Operating Expenses

71 Restaurant and Kitchen
- 711 Portion of Light, Heat, and Power
- 713 Board of Employees
- 714 Ice
- 715 Laundry
- 716 Stationery and Printing
- 717 Depreciation of China and Glassware
- 718 Depreciation of Linen
- 719 Soap and Washing Compound
- 71A Uniforms and Repairs
- 71B Sundry Repairs
- 71C Depreciation of Furniture and Fixtures
- 71D Portion of Management Salaries and Expenses
- 71E Portion of Maintenance of Building
- 71F Miscellaneous Expense

72 Food Supplies
- 721 Meat
- 722 Vegetables
- 723 Milk
- 724 Fruit
- 725 Tea and Coffee
- 726 Other Supplies

73 Beverages
- 731 Supplies Used

74 Cigars
- 741 Supplies Used

75 Laundry
- 751 Soap
- 752 Salaries
- 753 Portion of Light, Heat, and Power
- 754 Portion of Management Salaries and Expenses
- 755 Depreciation of Machinery
- 756 Board of Employees

76 House Expense
- 761 Supplies Used
- 762 Portion of Management Salaries and Expenses
- 763 Board of Employees
- 764 Stationery and Printing
- 765 Postage
- 766 General House Repairs
- 767 Depreciation of General House Furnishings
- 768 Telephone and Telegrams
- 769 Portion of Light, Heat, and Power

76A Miscellaneous Expense
76B Rooms
76B1 Salaries
76B2 Depreciation of Linen
76B3 Portion of Light, Heat, and Power
76B4 Stationery
76B5 Board of Employees
76C Uniforms and Repairs
77 Maintenance Expense
771 Golf Links
7711 Salaries
7712 Miscellaneous Expense
772 Upkeep of Grounds
7721 Salaries
7722 Miscellaneous Expense
773 Swimming Pool
774 Water Supply System
7741 Replacements and Repairs
7742 Miscellaneous Expense

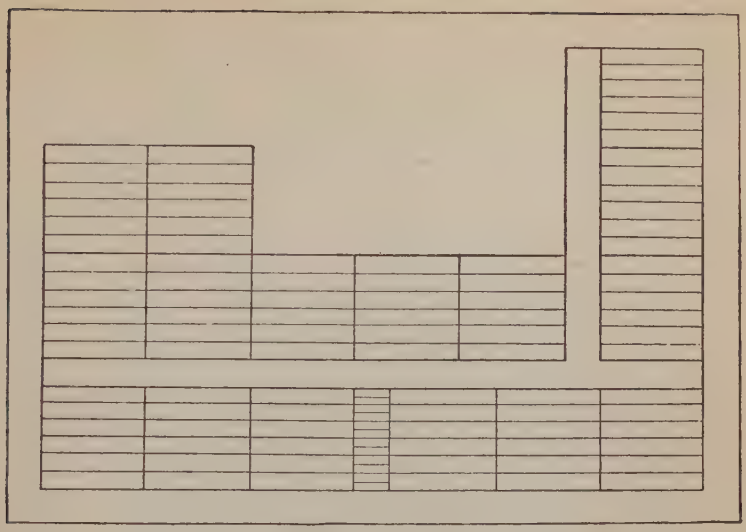
8. Sundry Expenses

81 Taxes
82 Depreciation on Buildings
83 Interest Expired
84 Bad Accounts Estimated
85 Insurance

ROOM RESERVATION AND GUESTS' ARRIVAL PROCEDURE

Case Number 1. A Reservation Chart[1] is utilized to assist the manager in knowing quickly just what rooms or cabins are available, when an inquiry is received for accommodations for a certain period of time. Assume that a corner room with plenty of window space is requested for a certain period. A glance at this chart shows the rooms available for the dates specified. It is noticed, say, that Number 5 is open. The name of the prospective guest and dates are entered in the space provided, in pencil, after which a letter is written setting out this information and asking for confirmation if everything is satisfactory. When

[1]Is there any similarity here with the Tickler File in a purchasing agent's office for following up orders placed? See Chapter III, *ante*.



Form 65: Reservation Chart.

the guest has confirmed in writing the selection made, the name and date are traced in ink on the chart space. If the tentative selection was unsatisfactory, the penciled name and date are erased from the chart, and probably a second attempt is made to satisfy the inquirer. The Reservation Chart naturally reflects the floor plans of rooms in the main building, and the various cabins scattered over the premises. The main building Reservation Chart is illustrated in Form 65.

Case Number 2. No such reservation plan is in operation, a simple card file indexed by dates being used, instead, each card representing a room or cabin.

Case Number 1. An Arrival Slip next is used. On this the following information is provided: Date of Expected Arrival; Members in Party; Quarters Selected; Length of Stay; Rate to be Charged. Frequently, a party occupies a suite of rooms for a certain length of time and then other rooms or a cabin; if so, a change of rate must be made and recorded.

Case Number 2. The Arrival Slip hereunder consists merely of a rough memorandum written in pencil on a small sheet of paper and retained upon a spike file. Such slip bears no printed matter as in Case Number 1.

Case Number 1. Upon his arrival, the guest signs the Hotel Register, giving name and address. The clerk fills in the spaces for Room Number; Time of Arrival; (breakfast, dinner, supper, or lodging); Method of Arrival (train or auto). Next, the clerk makes out a Room Card. This shows Name and Address; Room Number; Time of Arrival; Time of Expected Departure; Rate; Total Time; Amount Due. This card is placed in a rack in the post-office, so that only name and address, with room number, are visible; thus, it serves as a guide to the mail boxes for the mail clerk, the cards being arranged in this rack by room number, each such number corresponding to the mail-box number.

Case Number 2. Here, a Hotel Register is used just about as above, but no Room Card is found as indicated for Case Number 1. It will be noticed later that in Case Number 2, the major guest record is the Guest Ledger, upon which is shown practically all the information called for by the special forms of Case Number 1.

Case Number 1. The clerk next makes out an envelope in which are to be retained all Charge Slips—this acting as a guest's charge file. The front of the envelope shows the name of guest and room number, the envelopes being filed by room number. After the charges, taken either from the Charge Slips or Journal, have been posted on the Customers' Ledger, they are filed in this container for future reference. The date, department, and amount of each charge are entered on the face of this envelope. The total hereon eventually should be the same as that displayed on the guest's bill; this agreement should be noticed before any bill is given out.

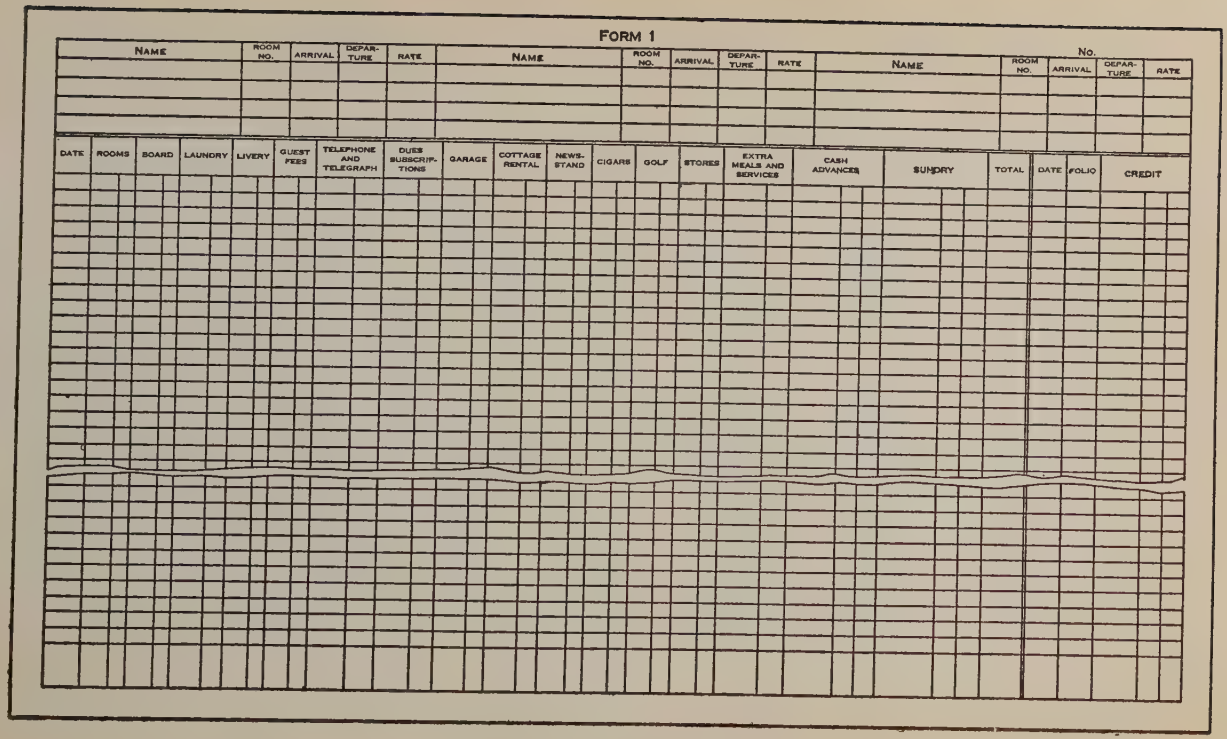
Case Number 2. No such scheme is utilized, the separate charge slips being filed by room number in a sort of mail-box container. No summarization form for checking purposes is found operated in the same manner as in Case Number 1, this being replaced by two forms mentioned later—the Control Sheet and the Income Journal.

CUSTOMERS' (GUESTS') LEDGER[1]

Case Number 1. The original sheet of this form is perforated along the left edge so as to permit its being detached readily from the binder, for utilization as a bill. The duplicate remains in the binder, a permanent record for future reference thereby being made available. The original sheet is ruled similarly to the form mentioned in a previous chapter for the Customers' Ledger in a merchandising concern. The duplicate is a plain sheet of colored paper.

Case Number 2. This form is a card Ledger. A card is made out for each member and on it in the spaces provided are entered the names of his guests, members of his family, and servants. When a name is written on a card, the room or cottage into which the person is to go is entered in the proper column. His arrival is noted by the first meal he eats in the dining-room. If a person arrives in time for lunch, L&D are marked in the arrival column, denoting that he is to be charged for only his lunch and dinner on that day. The same method is used for departure. Any one staying less than a full day is charged at extra meal rates and the charge is carried through the Extra Meal Book. In the rate column, the daily rate for each person is given. In the case of members, this rate is split into two parts, one for board and one for room. If the person is a non-member, an extra daily guest fee is added, the charge for which is entered in the column provided. The charge

[1]Note similarities and differences of this type of Ledger as compared with that found in a trading activity.



Form 66: Guests' Ledger Card.

for room is computed on a nightly basis. Each day the clerk goes through the cards and posts to them all charges of the preceding day under that date, extending the totals into the total column.

One card is kept for cash sales and is treated in the same manner as other cards.

The number of each card is filled in by the printer. See Form 66.

CHARGE SLIPS[1]

These slips represent the means of securing a first or original record of charges against guests for such items as truckage, taxi service, garage service, golf privileges, boat charges, laundry charges, telephone and telegraph tolls, and so on.

Case Number 1. The Charge Slips at this resort are represented by those indicated below:

Truck Charge. This shows the following information: Name; Room or Cabin Number; Date; Number of Trunks; Number of Bags; Number of Boxes; Number of Packages; Number of Canoes; Miscellaneous; Total Charge; Signature of Driver.

Taxi Charge. This shows the following information: Name; Room or Cabin Number; Date; Number of Persons; From; Destination; Mileage; Time Started; Time Returned; Extras; Total Charge; Signature of Chauffeur.

Garage Charge. The following information is displayed: Name; Room or Cabin Number; Date; Number Gallons of Gas—Price; Number Quarts Oil—Price; Number of Tires; Number of Tubes; Pounds Grease; Washing; Storage; Repairs; Total Charge; Signature of Mechanic; Car License Number; State.

Golf Charge. The following information is displayed: Name; Room or Cabin Number; Date; Number of Persons Playing; Number of Golf Balls—Price; Number of Clubs—Price; Caddy Service; To be Charged: Day—Week—Season; Signature of Links Master.

Boat Charge. The following information is shown: Name; Room, and Date as above; Number of Hours—Boat Num-

[1]Compare with Sales Slip in Chapter XII, *ante*. Why the difference in information shown?

ber; Number of Hours—Canoe Number; Number of Hours—Motor Boat; Number of Hours—Launch; Number of Oars; Number of Paddles; Number of Cushions; Number of Hours—Guide; Bait; To be Charged: Day—Week; Signature of Foreman.

Telephone—Telegraph Charge. The following information is shown: Name, Room, and Date as before; Station Called; Location; Party Calling; Time; Amount; Telegram—Night Letter; From; To; Charges: Collect—Prepaid; Signature of Operator.

Cash Paid Out. Guests frequently receive money from the cashier and have the amount thereof charged to their accounts. This form is nothing more than a Cash Voucher stating a certain amount of money was received from the cashier to be charged to the account of (guest). The guest signs the slip, as well as the cashier.

Dining-Room Charge. This form shows the number of guests served for which service some one's account is to be charged, the particular meal concerned, and extras. It is signed by the head waiter.

Miscellaneous Charges. This form is used where none of the above appear to be appropriate. Each one is signed by the clerk.

Case Number 2. At this resort, tickets somewhat similar to the above are used, with the exception that the telephone and telegraph record is a sheet holding a day's transactions, each sheet being signed by the operator and turned into the office in the evening for posting to the Guests' Ledger.

In both cases, the slips come padded—50 in a pad. The slips not mentioned above refer to the Grill Room, Newsstand, and Laundry. Inasmuch as all slips are posted directly to the Ledger accounts concerned, no recapitulation sheet is used, beyond that of the Control Sheet (*post*).

PURCHASES AND STORES[1]

In both cases, the procedures underlying purchases, stores, and requisitions are strikingly similar, although the forms used are dissimilar to some extent. The Purchase Order is

[1]Compare with discussion in Chapter III, *ante*.

prepared in duplicate, the original being sent to the vendor and the duplicate being placed on file until the invoice arrives. In the case of part shipments, the Receiving Report number is written on the order and the two forms are clipped together and left in the "unfilled" file until the balance arrives.

In each instance, the Receiving Report is prepared in duplicate, the original going to the office and the duplicate being retained by the Receiving Department. In the office, these reports are filed alphabetically, whereas in the Receiving Department they are filed numerically.

The Stores or Stock Card is an ordinary form in each case showing merely receipts, issues, and balance. In the first case, values at cost are carried, whereas in the second no values are carried, the balance being by units only. Stores are of various kinds as shown by the Chart of Accounts. Issues in each case are by means of requisitions.

All invoices are entered upon a Voucher Register, the invoices being numbered numerically. The Voucher Register ruling in each case is as follows:

Case Number 1	Case Number 2
Date	Date
Name	Name
Voucher Number	Voucher Number
Total	Accounts Payable
Date Paid	Food
Amount Paid	Cigars
Check Number	Laundry
Pay-Roll	Beverages
Purchases	Restaurant and Kitchen
Expenses	House
Miscellaneous	Maintenance
	News-Stand and Candy
	Fuel
	Livery
	Sundries

No accounts Payable Ledger is operated in either case.

CASH RECORDS[1]

In Case Number 1, a Cash Received Sheet is used for each day. The columns are as follows:

Date
From
Form (whether currency, check, money-order, and so forth)
Amount
Distribution
  Rooms
  Dining
  Laundry
  Garage
  Boats
  Sports
  Grill
  Cigars
  Candy
  Sundries

In Case Number 2, there is first what is known as a Front Office Desk Cash Book. This book is in charge of the clerk. A petty cash fund is kept in the cash drawer from which checks are cashed and cash payments made. All payments and receipts are entered immediately in the Cash Book when made. At the end of the day, the cash is balanced, the fund deducted from the debit balance, and the remainder is sent to the bank as a deposit. All checks in the cash fund are sent to the bank and exchanged for cash to keep the supply intact.

The individual items in the Accounts Receivable column are posted to their respective cards. The General column items are posted to the General Cash Book. Total Cash receipts are posted to the General Cash Book.

On the credit side of the Cash Book, the items in the Cash Advance column are posted to their respective cards, and the expense column to the General Cash book. The total cash goes to the General Cash Book.

[1]Compare with forms in Chapters II—V—XIII—XIV.

The left- and right-hand pages resemble a two-column Journal, the "amount" columns being headed:

Left page	Right page
Accounts Receivable	Cash Advances
General	Expense

In each case, a petty cash fund is operated for the payment of small bills.

In Case Number 1, the Check Register is kept by months; it is ruled as follows:

Date
Number of Check
In Favor of
Voucher Number
Net Amount of Check
Discount
Amount of Invoice
Distribution
  Account
  Amount
Deposits
Balance
Withdrawals

In Case Number 2, there is a General Cash Book. The daily cash receipts as shown by the Front Desk Cash Book are entered here in total, showing the total cash, accounts receivable, and General Ledger items. The total cash at end of the month is posted to the Cash account in the General Ledger, as is also the Accounts Receivable. The General Ledger column which consists of miscellaneous cash receipts other than Accounts Receivable should be posted each item individually.

Exchange checks consist of the amount of checks cashed for guests, for which a check is drawn and cashed to reimburse the front office cashier or clerk. The total of this column, of course, should agree with the corresponding column in the Cash Disbursement Record.

On the credit side of the Cash Book are entered all disbursements by checks.

The Accounts Payable and Cash columns are posted in total at the end of the month. The General Ledger column in which would be entered disbursements for which no voucher would be made, should be posted separately.

Cash disbursements per the Front Office Cash Book should be recorded on a separate page in the Voucher Register daily and the total shown in the General Cash Book "Accounts Payable."

The Monthly Pay-Roll should be entered in the General Journal as follows for the total amount:

Debit—Salaries and Wages
Credit—Salaries and Wages Accrued
Pay-Roll for month ....., 1925

Pay-Roll disbursements should be entered in the General Cash Book and be charged to Salaries and Wages Accrued. The total figure being posted at the end of the month, the balance in this account would represent unpaid salaries.

The ruling for the General Cash Book is as Follows:

Receipts	Payments
Date	Date
Explanation	Explanation
Total Cash	Total Cash
Accounts Receivable	Accounts Payable
Exchange Checks	Exchange Checks
General Ledger	Salaries and Wages Accrued
	General Ledger
	Bank
	Checks
	Balance
	Deposits

SUNDRY FORMS AND RECORDS

In each case, numerous records and forms are utilized other than those mentioned above. In Case Number 1, the following are found:

General Journal. This is a regular six-column arrangement.

General Ledger. This is standard ruled.

Pay-Roll Book. Wages are paid by the week. The form provides for the following information: Employee's Number; Employee's Name; Days of the Week (S-M-T-W-T-F-S); Total Time; Rate; Amount; Deductions; Net.

Insurance Register. This is a regular form as purchasable in stationery stores.

Transient Card. This form is intended for use when a guest stops only for a day or two. From left to right are seven columns, one for each day of the week, and a "total" column. Vertically, at the left, the following are found: Lodging; Meals; Garage; Golf; Boat; Laundry; Miscellaneous; Total.

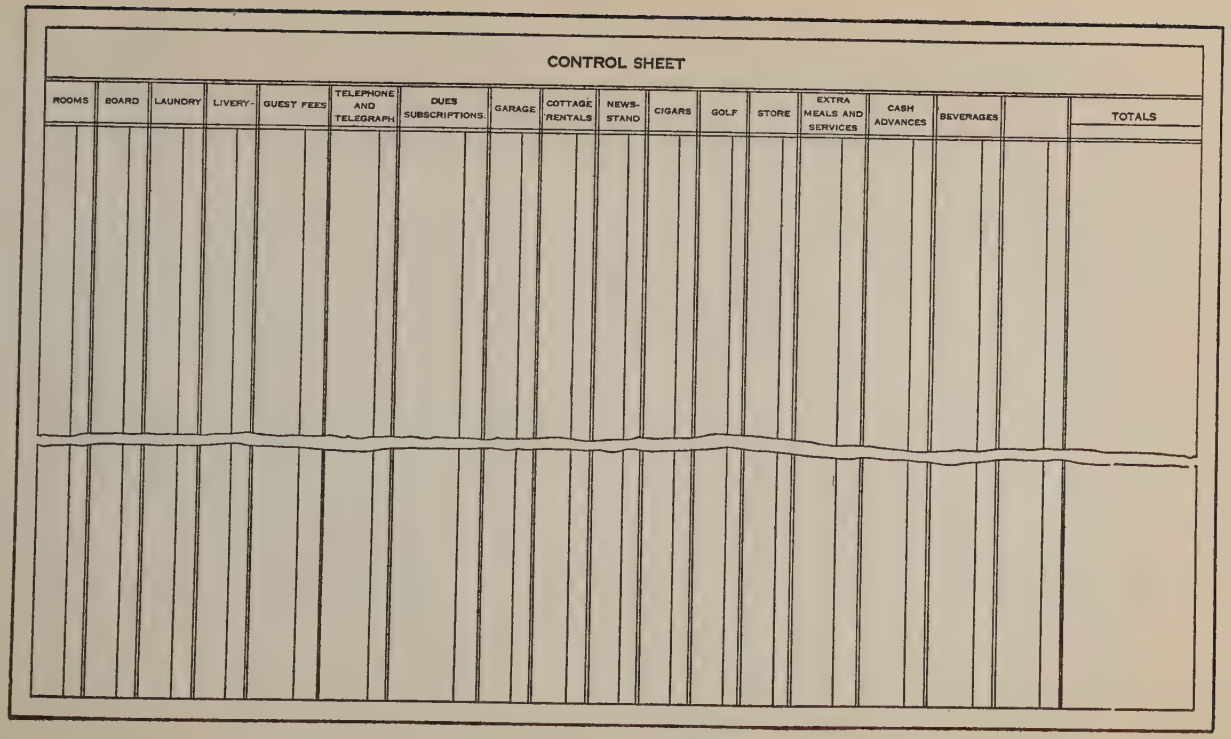
Small and Large Bill Head.

In Case Number 2, the following sundry forms and records are found:

Pay-Roll Card. One card is made out for each person as he enters the employ of the hotel. All wages and salaries are paid monthly. At the end of each month, each card is credited for the amount due. It is debited for all advances and for final payment. In its ruling, this card represents a standard form of Ledger sheet.

Weekly Bill. Guests are billed weekly. Vertically, at the left of this form are the various services for which possible charges may be incurred. Horizontally, are a number of columns without titles in which to place amounts.

Control Sheet. Each day the bookkeeper goes through the cards after the clerk has completed the postings, and draws off an abstract of each card on the Control Sheet. Each item on the card is entered in the proper space on the sheet, and the daily total of all items as shown on the card



Form 67: Control Sheet.

is placed into the "totals" column at the right of the sheet. After every card in the Ledger has been posted onto the Control, the vertical columns are added, giving the daily total of each item for all the cards. These totals are then added, and if they agree with the sum of the totals at the right, it proves that the cards have been accurately totaled for that day by the clerk. The totals of each item also can be compared with totals of each sheet and book of original entry; thus, the correctness of the posting to the cards by the clerk can be obtained.

This sheet gives the bookkeeper an accurate check on the cards and also proves his figures before they are entered into the books of final entry. See Form 67.

Income Journal. The totals of the various items on the Control Sheet are posted to their respective columns in this Journal day by day. The totals for the month are posted to the Ledger accounts. The total column is debited to Accounts Receivable, the other items being credited to their different accounts in the General Ledger. See Form 68.

General Ledger. This is standard ruled.

General Journal. This is the regular six-column form.

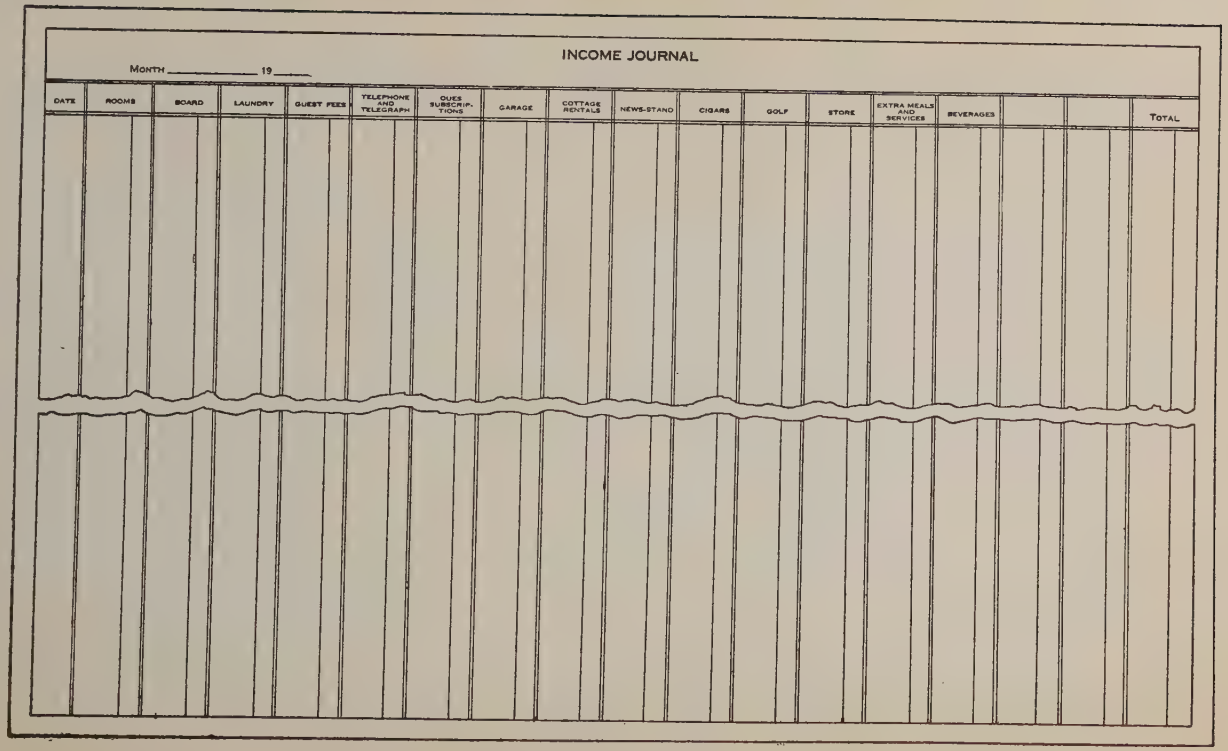
REPORTS AND STATEMENTS

In Case Number 1, the following reports and statements are found:

Record of Daily Business. This form keeps the management informed concerning daily progress of business in the various departments. It is merely a columnar sheet, the columns being headed: Rooms; Dining-Room; Laundry; Garage; Boats; Golf; Tennis; Grill; Cigars; Candy; Garden; Daily; Ice; Sundries; Remarks. Nothing is shown hereon relative to the departmental expenses.

Housekeeper's Daily Report.

Daily Record of Meals Served. This form shows the



Form 68: Income Journal.

number of meals served at each table—Breakfast, Dinner, Supper.

Weekly Record of Meals Served. This is a recapitulation of the information on the daily form.

Weekly Record of Ice Used. This is a summary of ice used in each department.

Directory of Clients. This is a card record or file, one card for each guest or member, containing information for future use.

In Case Number 2, the following reports and statements are found:

Meal Record. This form is similar to the weekly one mentioned above.

THE LAKESIDE CLUB

STATEMENT OF REVENUES AND EXPENSES FOR THE PERIOD ENDING _____ 192____

	ACCT NO	NAME OF ACCOUNT	THIS YEAR				LAST YEAR			
			WEEK		YEAR TO DATE		WEEK		YEAR TO DATE	
			AMOUNT	%	AMOUNT	%	AMOUNT	%	AMOUNT	%
		Income								
	61	Restaurant								
	62	Cigars								
	63	News-Stand								
	64	Rooms								
	65	Dues and Subscriptions								
	66	Golf Fees								
	67	Beverages								
		Total Income								
		Deductions From Income								
		Operating Expense								
	71	Restaurant and Kitchen								
	72	Food Supplies								
	73	Beverages								
	74	Cigars								
	75	Laundry								
	76	House Expense								
	77	Maintenance								
	78	Total Operating Expense								
		Operating Profit								
		Sundry Losses								
	81	Taxes								
	82	Depreciation on Buildings								
	83	Interest Expired								
	84	Bad Accounts Estimated								
	85	Insurance								
		Total Sundry Losses								
		Net Profit								
	53	Profit and Loss First of Period								
	53	Profit and Loss of Date								

Form 69: Weekly Income and Expense Statement.

Weekly Income and Expense Statement. This form is the profit and loss section of the Trial Balance.

The Profit and Loss Statement is worked out by inserting the balance of the various revenue and expense accounts, making indicated additions and deductions to arrive at the profit for the current week, for the year or season to date, and for comparative figures with the previous year.

The columns headed "percentage" are used to work out the relationship between various items of income and the expense to the total income which is taken as 100%. See Form 69.

Problems

(*a*) In connection with Case Number 2, mentioned in this chapter, prepare a system (or work) chart showing the general outline for the flow of work from the records of original entry to the records of final entry. Show in the proper positions, the income and expense accounts used. Enumerate the criticisms that suggest themselves to you on Case Number 2, and suggest improvements to be made.

(*b*) Assuming the same conditions as outlined in this chapter for a summer hotel, draw up complete system plans, utilizing the best portions of the systems in Cases Numbers 1 and 2 (in your opinion).

(*c*) A recreation park is owned by a large corporation being treated on the General Ledger and other main office books as a department of that company. Although there are revenues from the park, these are not at all sufficient to meet its operating expenses. Since the corporation uses the park as a means of creating good-will with its employees, this yearly loss is looked upon in the same manner as is free medical service.

The park has a half-mile dirt track for light-harness racing, stables in which the horses are quartered, and a covered grandstand 600 feet long on one side of the track. Inside the track there is an athletic field, consisting of two baseball diamonds, one of which is used as a football field in the fall, a skating rink in the winter, and a soccer field.

There is also a club house where the athletic teams or skaters may dress. There are tables for picnic parties, tennis courts, a dance pavilion, a swimming pool and bath house; a boat house, filtering plant for the pool and refreshment stands are on the grounds.

The tract is under the supervision of one whose title is that of superintendent. The number of men working in the park varies according to the time of year, being greater during the summer months than during the remaining time. Some of these workers are at the park the entire year, others are transferred from the factories during the summer months, and the third group, usually composed of students home from college, is hired for the summer.

Although the men may be transferred about at the direction of the superintendent, there are four general groups. One group works at the stables, another at the bath house and swimming pool, a third at the refreshment stands, and the fourth group includes those whose work is that of maintaining the upkeep of the grounds and buildings. Over each of these groups is a boss or some man in charge of the work.

All the men ring in and out on a time clock. The men in the general maintenance group labor a 9-hour day from 7:00 until 5:00, with some overtime at certain intervals during the year. The men at the stables have irregular hours, depending upon the amount of work to be done. They average about 63-70 hours a week. The men at the swimming pool work from 8:00 in the morning until 9:30 or 10:00 at night. The pool is cleaned every two weeks, at which time the men work all night, having the next day off while the pool is refilling. The men at the refreshment stands work at irregular hours, depending upon the amount of business and cleaning to be done.

For accounting purposes, the park is subdivided into divisions, as follows:

Division 1—*The Stables.* Consists of seven buildings, with about 250 stalls, sleeping quarters for trainers, drivers, and so forth, and four rooms, which are used as offices by a local racing association.

Division 2—*The Race Track.* Consists of a half-mile dirt track.

Division 3—*The Club House.* Consists of a two-story building. The upper floor is used as a dance hall. The lower floor is divided into two parts, a lunchroom, and dressing rooms for athletic teams.

Division 4—*The Athletic Field.* Consists of the grounds within the race track. On this ground are two baseball fields, and a soccer field. One of the diamonds is used as a football field in the fall and is flooded and used as a skating rink in the winter.

Division 5—*The Grand Stand.* Consists of a covered wooden

structure 600 feet long with about 20 rows of seats alongside the straight-away of the track.

Division 6—*The Boat House.* Consists of a two-story wooden structure with wide porches, upon which are picnic tables.

Division 7—*The Skating Pond.* Consists of that part of the athletic field (Division 4) which is used as a skating rink during the winter.

Division 8—*The Dance Pavilion.* Consists of a large enclosed wooden pavilion which contains the dance floor and the office.

Division 9—*The Bath House.* Consists of a two-story building with dressing rooms for men and women.

Division 10—*The Swimming Pool.* Consists of a concrete basin, into which the water from the filtering plant is turned.

Division 11—*The Filtering Plant.* Consists of a one-story building, housing the machinery for filtering the river water used in the pool. On the roof are picnic tables.

Division 12—*The Grounds.* Into this is thrown everything which does not fit under any of the other subdivisions.

Division 13—*The Refreshment Stands.* Consists of five separate stands located at different places on the grounds.

Division 14—*The Playgrounds.* Consists of that part of the park equipped with swings, teeters, and other playground equipment.

Division 15—*The Tennis Courts.* Consists of four clay courts.

Division 16—*The Basketball Court.* Consists of the dance pavilion (Division 8) which is converted into a basketball court in the winter.

Division 17—*The Monument Park.* Consists of a plot of ground around a memorial monument to the World War Veterans.

Division 18—*The Merry-Go-Round.* Consists of an enclosed building housing the merry-go-round.

When the men report for work, they are assigned by the superintendent to the division in which they are to work during the day. A clerk makes a note of these assignments for purposes of record entry. If the men are shifted to another division during the day, the superintendent, or the boss under whom the men are working, reports this to the office so that such fact may be shown.

Help required from other departments is secured by requisitions drawn upon the necessary department. The men report at the office when they come on the job and when they leave.

The other department keeps the time that they leave and when they return and, weekly, sends through to the office an Inter-department Detailed Bill.

Requisitions for supplies usually are drawn against other departments of the company.

Purchases outside the corporation, with the exception of those for the refreshment stands, are made by the general purchasing agent, upon whom requisitions are drawn for the articles needed.

Purchases for the refreshment stands are made by the superintendent, or the boss of the refreshment stands (usually the latter). They are allowed to purchase such things as cigars, cigarets, candies, soft drinks, and so forth.

The park secures its ice-cream, bread, rolls, coffee, hot dogs, pies, and so forth, from the restaurant department, upon whom requisitions are drawn.

A weekly inventory is taken. This is determined by an actual count of the goods on hand.

The incomes from the different divisions are as follows:

Division 1—Rent from use of the stables.
Division 2—Leased to a local racing association.
Division 3—Fee for all parties held there. Also sales from lunchroom.
Division 4—No income.
Division 5—Leased to a local racing association.
Division 6—Rent from storage of canoes.
Division 7—Cash from sharpening skates and renting lockers.
Division 8—Cash from checking at dances, from player piano, and from public telephone.
Division 9—Cash from rental of lockers, suits, towels, and so forth.
Division 10—No income.
Division 11—No income.
Division 12—No income.
Division 13—Cash from sales. Sales are secured from readings on the cash registers. All stands are thrown into this one division.
Division 14—No income.
Division 15—Charges for use of courts.
Division 16—Cash from checking at the games.
Division 17—No income.
Division 18—Fee charges to adults.

Weekly, a Profit and Loss Statement is prepared for the park,

showing the labor, materials, and other expenses; and the revenues of each division.

Monthly, a Profit and Loss Statement is made out. The general bookkeeping office also sends to the park a Monthly Profit and Loss Statement. After the amount of overhead apportioned to the park has been added to the statement made out by the park the two should agree.

The amount received from the lease on the race track and grandstand is not figured in the Weekly Profit and Loss Statement, but is included in the monthly one. The company must care for the upkeep of these two divisions, but does not receive anything from the admissions charged for seeing the races.

Requirements:

Draw up detailed plans, with forms and records, for this recreational activity. Include a schedule of entries necessary to show the exact operation of your system.

XVI

GARAGES

Case I: Stock inventories — purchases — sales — expenses — monthly progress—cash, notes and accounts receivable—labor.

Case II: Stock inventories—purchases—sales—expenses—monthly progress—cash, notes and accounts receivable—labor—explanation of system.

It is proposed in the present chapter to consider briefly the major portion of a system of accounts for a garage and, in attempting this, two actual cases have been drawn upon for the information offered. Although the two situations are somewhat dissimilar, the basic essentials appear fairly uniform in each instance.

By using two situations related to the same type of business, it is hoped that, among other features, one principle of general utility will be demonstrated: In system work it may be assumed that, ordinarily, there exists more than one method whereby a satisfactory solution to a problem may be developed.

It will be noticed that in connection with each case, certain minor matters and forms have not been discussed or commented upon. The knowledge acquired by the reader up to this point is assumed to be such that these may be developed satisfactorily in a given case, without current treatment, so that the fabric or plan will be complete.

CASE I: STOCK INVENTORIES[1]

Frequently, it is assumed that the logical place at which to commence a system installation is in connection with the stock on hand. To begin with, a physical inventory of stock is taken. Then, preferably in a room set aside for such pur-

[1]Review Chapters III and XII, as to Inventories.

pose, shelves may be installed and the stock so arranged thereon that at subsequent intervals only a few hours are necessary in which to take the complete inventory. The taking of the inventory at later times may be accomplished in either of two possible ways:

1. Actually counting the goods upon the shelves and in the warehouse.
2. By subtraction and addition. Each shelf should contain a certain number of predetermined rows of each kind of article and each such row a certain specified number of them therein. As goods come into the warehouse, they are entered upon Stock Cards by cases, and so forth; upon being sent to the supply room, broken containers are avoided so that these Stock Cards may be credited by gross unit in accord with the charge thereto.

Each article in current stock should carry a stock number, regardless of the quantities involved, these numbers being indicated by tag or by gummed label attached to the articles themselves. In addition, each such tag or label shows in code both the cost and the sales price. Then a loose-leaf blank book is secured and upon the sheets therein the various articles carried are typed, in alphabetical order, stock numbers being placed to the left of the names. The cost and sales price are noted at the right. This record may not be used at all, except at inventory taking times; at such intervals, its usefulness will be fully appreciated.

The actual taking of the inventory requires the use of Inventory Sheets, size about 8 x 15 inches, padded, and printed upon paper of fairly good quality. Headings in the body of the sheet at least will cover the following:

Stock Number
Quantity
Article
Unit Cost
Extended Cost
Unit Retail Price
Extended Retail Price

At least two persons should be assigned the task of taking

the inventory. In the original instance, the Stock Cards are prepared herefrom; at subsequent times, these Stock Cards are revised upon the basis of the actual count made. Stock Cards are used both in the warehouse and in the supply room.

The Stock Cards are charged upon receipt of goods into stock as a result of purchases, or sales returned, or by transfer of commodities from warehouse to supply room. Credits to the Stock Cards come from:

1. Duplicate Sales Slips covering each item sold—supply room;
2. Transfer Slips covering transfer of articles to the supply room—warehouse.

A correct accounting of stock under this procedure permits the owner to have available reliable information as a basis upon which to make purchases, and it may avert considerable controversy in case of loss by fire in establishing the amount of such loss to the satisfaction of the insurance company.

Provision should be made upon the Stock Cards for showing: Name of Article; Stock Number; Cost Price; Sales Price; and such other information as may appear desirable under the premises.

PURCHASES[1]

Purchase invoices as received are placed in a separate file there to await the receipt of goods called for. When the articles covered thereby have been found to be in order, and the invoices have been checked out properly, each is allotted a numerical designation, following which entry is made in the Purchase Register. Subsequently, if goods are involved (purchases may be for items other than goods), they are sent to the warehouse; in certain cases, they will be sent at once to the departments for whose use they were secured. In the latter event, provision must be made for charging

[1]Compare purchase procedure with that in Chapters XII and XV, *ante*.

correctly the departments concerned. In the case of goods, such procedure may contemplate having the articles go into stock and out again, as a matter of record, or this portion of the entry process may be omitted, only the departmental charge angle being utilized.

The Purchase Register and the purchase process cover the inclusion of expense supplies and services as well as commodities. Upon the Purchase Record, expenses are entered, one column for each class of expense, as selling, and so forth, for each of which an Expense Analysis Sheet is provided. The detail expense accounts are not carried upon the Ledger record, these being found only upon the underlying analysis sheets to which reference is made when the periodical operating statements are prepared. The accounts carried upon the Ledger correspond to the summarized expense divisions represented by columns upon the Purchase Register. Purchases for cash and on credit are entered upon this record.

The register ruling provides for the following:

Invoice Number
Invoice Date
Bought from
Terms
Gross Invoice Amount

The distribution of each gross amount is dependent primarily upon the departments operated; hereunder:

Warehouse—Merchandise
Autos
Accessories
Repair
Taxi
Expense
  Selling
  Office

In this system, an Invoice Blotter[1] is used, its purpose

[1]Wherein does this differ from the Purchase Statement of Chapter XIII, *ante?*

merely being to provide a means whereby the management may know daily the trend and net condition of its invoice obligations. Hence, no postings are made herefrom. It represents a record of all invoices, and shows the total balance daily payable. As soon as an invoice has been received and O.K.'d, entry is made hereon. When an invoice is paid, such fact should be noted. The last column, as to balance, at the end of each month should be checked against the General Ledger. The ruling provides for the following:

Date
Name
Invoice Number
Terms
Due Date
Payment
  Date
  Check Number
Gross Amount
Discount
Net Amount
Total Invoices Today
Total Invoices Paid Today
Balance Payable

SALES[1]

The Sales Register provides for departmentalization, and separation is so made that gross profit by departments may be determined. It is unnecessary, however, to differentiate herein between charge sales and credit sales. At the close of each day, the Sales Slips are sorted by departments, each bundle then run through the adding machine, and each total thus secured is entered upon the Sales Register. Following this, it is necessary next to cost the sales and make entry of such cost on the Sales Register, so that both sales and cost prices are found thereon.

The Sales Register, one sheet each month, is ruled in accord with the following:

[1]Compare ruling with that for a Sales Record in a commission business, Chapter XIV, *ante*.

Date
Total
  Cash
  Charge
  Total
  Cost
Distribution
  Autos
    Sales
    Cost
  Accessories
    Sales
    Cost
  Repair
    Sales
    Cost
  Taxi
    Sales
    Cost

EXPENSES[1]

It is requisite that the expenses of each department should be kept separate from those in each of the other departments. For this purpose, an Expense Analysis Sheet is provided. Entry hereon is made on payment dates. Since but one sheet is used each month, presumably, the columns need be totaled but monthly.

Salaries in full are chargeable to the departments for whose benefit they are incurred. Rent is distributed monthly upon a floor space basis. The ruling for such a form provides for the following:

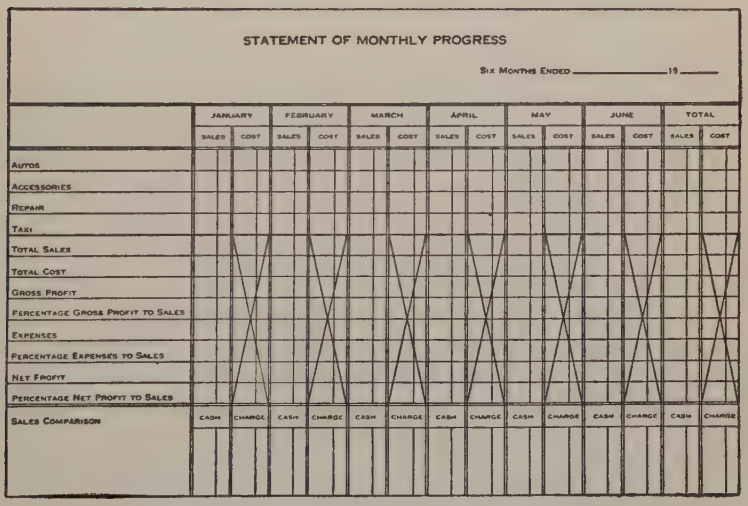
Date
Item
Amount
Distribution
  Autos
  Accessories
  Repair
  Taxi

[1]Compare expense analysis in this case with that commented upon in Chapter XIII, *ante*.

MONTHLY PROGRESS[1]

In order to show the progress of the business month by month, a form is ruled for such purpose. The first or upper portion of this report relates to sales; the second or lower portion presents some statistical information as well as both gross and net profit.

The Sales Register is referred to in securing information to be placed thereon relative to sales and the cost thereof. Gross profit is represented as total sales less total cost of sales. The percentage of gross profit is secured by dividing gross profit by total sales. The expenses included flow hereto from the Expense Analysis Sheets. The expenses divided by the total sales gives the percentage of expense. The gross profit less expenses represents the net profit. The net profit


STATEMENT OF MONTHLY PROGRESS

SIX MONTHS ENDED _____ 19____

	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		TOTAL	
	SALES	COST	SALES	COST	SALES	COST	SALES	COST	SALES	COST	SALES	COST	SALES	COST
AUTOS														
ACCESSORIES														
REPAIR														
TAXI														
TOTAL SALES														
TOTAL COST														
GROSS PROFIT														
PERCENTAGE GROSS PROFIT TO SALES														
EXPENSES														
PERCENTAGE EXPENSES TO SALES														
NET PROFIT														
PERCENTAGE NET PROFIT TO SALES														
SALES COMPARISON	CASH	CHARGE	CASH	CHARGE	CASH	CHARGE	CASH	CHARGE	CASH	CHARGE	CASH	CHARGE	CASH	CHARGE

Form 70: Statement of Monthly Progress.

divided by the sales figure gives the net profit percentage. The last line shows a comparison of sales—cash and charge—month by month. See Form 70.

[1]Compare this statement with the monthly statements of Chapter XIII, *ante*.

CASH, NOTES AND ACCOUNTS RECEIVABLE

In connection herewith, two records are used. The first one may be considered as a Daily Blotter, and the second is the Check Register. The first form, one sheet per month, presents a summary view of cash fluctuation, volume of accounts receivable, and the daily situation in regard to the notes receivable.

The ruling for the Daily Blotter[1] provides for the inclusion of:

Date
Cash
  Cash Sales
  Received on Account
  Total Receipts
  Cash Paid
  Deposited
  Cash Balance
Accounts Receivable
  Charge Sales
  Received on Account
  Balance Uncollected
Notes Receivable
  Obligor
  Amount
  Due Date
  Date Paid
  Interest

The ruling for the Check Register provides for the inclusion of:

Date
To Whom
Invoice Number
Gross Amount
Deductions
  Discount
  Other
Net Amount
Checks

[1]Could this form be used to advantage in a retail business, as covered by Chapters XII, XIII, XIV, *ante*?

Number
Total Daily Issue
Deposits
Date
Amount
Bank Balance

LABOR[1]

In the repair department, it is necessary to provide Labor Tickets. These, in fact, may be so ruled as to be of the essence of a Cost Sheet. A separate Labor Ticket is used for each job that comes into the department.

If, in connection with the work to be done, accessories are necessary, a Sales Slip is filled out upon which the car

LABOR TICKET

CHARGE _____ DATE _____

_____ CAR _____

WORKMAN	KIND OF LABOR	NO HOURS	RATE	AMOUNT	ACCESSORIES	AMOUNT	TOTAL

Form 71: Labor Ticket.

owner is charged, and is signed by the workman who receives the articles needed. These Sales Slips are sent to the office and there they are handled in the same manner as if a charge sale of the items had been made over the counter. This means that the repair department receives no credit for accessories used in connection with work therein performed;

[1]Review labor comment in Chapter VI, *ante*.

the only sale of the repair department is that of labor service.

When a Labor Ticket is received in the office, the Sales Ticket related thereto, if any, is compared therewith so that it is known that all accessories used on the job actually have been charged to the customer. The Labor Ticket is shown in Form 71.

CASE II: STOCK INVENTORIES[1]

In commencing the discussion upon the second system contemplated, perhaps it is well to assume a point of start similar to the former case. But in the present one, the keeping of a perpetual inventory record was not planned, inasmuch as it is believed that the work entailed is beyond reason. Instead, the usual retail method of calculation is utilized under which, for each class of goods, a definite percentage of mark-up is agreed upon, and this is referred to in determining the amounts of the periodic inventories.

In other words, the basis here is a card or loose-leaf book prepared along the lines of the book suggested previously in which the various articles carried will be shown by classes, including cost price, mark-up percentage, and sales price. When goods are received into stock, they are entered by classes into Inventory accounts. Sales are analyzed daily or monthly by classes, and the mark-up percentage involved in each case is deducted from the total sales of each, the resultant figures representing their cost. These figures are charged to Cost of Sales and are credited to Inventory, each class separately.

Twice each year a physical inventory is taken, at which time overages and shortages are investigated and adjustments made therefor; the discrepancies uncovered, however, ought to be but slight in amount, so small, in fact, that their amount, particularly as to net shortage, will be far less than

[1]Compare with Case Number 1. The same may be done with other features of Case Number 2, pointing out similarities and differences.

would be the cost rendered necessary to operate a regular perpetual inventory plan.

The above plan, however, was not found feasible to operate in connection with all items sold. In the case of tires and accessories (which are not parts) there is no fixed margin of profit. Hence, earnings hereunder are set up as sales are made. On the other hand, such items as parts, gasoline, and oil carry a fixed margin of profit.

PURCHASES

The handling of purchase invoices presents no marked departure from the procedure contemplated under the former case. But the entry process seems strikingly dissimilar, there being no separate Purchase Register with underlying Analysis Sheets, all entries passing through a so-called combined Cash Book and Journal. Likewise, no Invoice Blotter is noticed, the monthly statements being deemed sufficient for the presentation of useful information.

SALES

A separate record for sales is maintained, as in the former case, and as before, the basis of entry therein is the Sales Slip. Note, however, the marked difference in handling procedure related to the record; also, the difference in basic ruling.

EXPENSES

As mentioned two sections above, Case Number 2 does not make use of underlying Expense Analysis Sheets. In Case Number 1, expenses are entered first in total upon the Purchase Register, and then in detail upon the Expense Analysis Sheet; expense is posted as one item monthly and later cleared against the departments. In Case Number 2, expenses in part are located upon the Sales Book and in part upon the Cash Book Journal.

MONTHLY PROGRESS

The statement showing monthly progress in Case Number 2 appears to be radically different from that shown in Case Number 1. The Balance Sheet, however, under each situation may be practically identical in form.

CASH, NOTES AND ACCOUNTS RECEIVABLE

The records shown for Case Number 1 under this heading are not at all similar to those displayed for Case Number 2. In the latter instance, the essential record appears to be the Cash Book Journal; it might be advisable, however, under the second possibility to use a regular Bill Book for notes receivable.

GARAGE
STATEMENT OF ASSETS AND LIABILITIES

	CASH ACCOUNTS				**CURRENT LIABILITIES**		
1	Petty Cash Fund	X X		50	Accounts Payable	X X	
2	Change Funds	X X		51	Notes Payable	X X	
3	Bank	X X	X X	52	Interest Payable	X X	
	BOOK ACCOUNTS			53	Accrued Taxes	X X	
10	Customers' Accounts	X X		54	Personal Accounts	X X	X X
11	Notes Receivable	X X			**RESERVES**		
12	Advanced on Cars	X X		60	Depreciation	X X	
13	Interest Receivable	X X		61	Doubtful Accounts	X X	
14	Personal Accounts	X X	X X	62	Contingencies	X X	X X
	INVENTORY ACCOUNTS				**CAPITAL ACCOUNTS**		
20	New Cars	X X		75	Capital Stock	X X	
21	Used Cars	X X		76	Surplus	X X	
22	Repair Parts	X X		77	Current Profit and Loss	X X	X X
23	Accessories	X X					
24	Unfinished Shop Work	X X					
25							
26			X X				
	PROPERTY ACCOUNTS						
30	Land	X X					
31	Buildings	X X					
32	Shop Equipment	X X					
33	Office Equipment	X X					
34			X X				
	DEFERRED CHARGES						
40	Unexpired Insurance	X X					
41	Supplies	X X					
42	Prepaid Interest	X X	X X				
			X X				X X

Form 72: Statement of Assets and Liabilities.

LABOR

In Case Number 2, a Daily Labor Report is utilized which covers all jobs for the day and all workmen, rather than each specific job and each individual workman. The ultimate object, however, seems to be similar: to allocate each charge either to cash or to a charge customer.

EXPLANATION OF SYSTEM

Form 72 shows the assets and liabilities of the business. Comment hereon seems unnecessary except that "Deposits" represents deposits made with motor companies against new cars contracted for.

Form 73 shows information threefold in character. The first half of the statement presents the results of the operations from the period to date for the current year. The second portion of the statement indicates the results of operations for the current month. In both cases a column is provided for the figures of the business for the corresponding period and month of the previous year. The difference between the amounts is set out in columns 3 and 6. If the totals of the current month or year are greater than for the corresponding periods of a year ago, the figures are in black —if otherwise, they are in red. Gross sales from all sources as shown in the chart are listed under the heading of "Sales," from which the cost of these sales is deducted—the amount of money expended for the articles at the time they were purchased. The difference, or gross profit, represents the amount that must be realized to pay the overhead expense and leave a reasonable percentage of net profit.

In Form 74 the revenues and expenses have been distributed among the various departments of the business—total sales, cost of sales, and expenses. Total overhead relates to office and administrative. New car and used car departments require no comment since but one item is to be listed—total sales. The shop department includes all

GARAGE
STATEMENT OF REVENUES AND EXPENSES

		To Date			Current Month		
		THIS YEAR	LAST YEAR	DIFFERENCE	THIS YEAR	LAST YEAR	DIFFERENCE
	SALES						
101	New Cars						
102	Used Cars						
103	Repair Parts						
104	Accessories						
105	Labor—Gasoline—Oil						
	TOTAL SALES						
	COST OF SALES						
110	New Cars						
111	Used Cars						
112	Repair Parts						
113	Accessories						
114	Labor						
115	Gasoline—Oil						
	TOTAL COST OF SALES						
120	Gross Profit on Sales						
	EXPENSES						
130	Salaries						
131	Commissions						
132							
133	Rent						
134	Heat						
135	Light and Power						
136	Advertising						
137	Postage						
138	Freight and Cartage Out						
139	Telephone and Telegraph						
140	Auto Guarantee Expense						
141	Assembly and Get Ready						
142	Insurance						
143	Stationery and Printing						
144	Discount and Allowance						
145	Taxes						
146	Depreciation						
147	Losses on Bad Accounts						
148	Cash Over and Short						
	TOTAL OPERATING EXPENSE						
	OPERATING PROFIT						
	ADDITIONS						
150	Purchase Discount						
151	Interest Earned						
	TOTAL						
	DEDUCTIONS						
152	Interest Paid						
	Other Deductions						
	TOTAL						
	NET PROFIT						

Form 73: Statement of Revenues and Expenses.

GARAGE

DEPARTMENTAL STATEMENT OF REVENUES AND EXPENSES

		TOTAL	TOTAL OVERHEAD		NEW CARS	USED CARS	SHOP	STOREROOM	STORAGE	GAS	OIL	TIRES
			OFFICE	ADMINISTRATIVE								
106	Sales											
116	Cost of Sales											
120	Gross Profit											
	EXPENSES											
130	Salaries											
131	Commissions											
133	Rent											
134	Heat											
135	Light and Power											
136	Advertising											
137	Postage											
138	Freight and Cartage Out											
139	Telephone and Telegraph											
140	Auto Guarantee Expense											
141	Assembly and Get Ready											
142	Insurance											
143	Stationery and Printing											
144	Discount and Allowance											
145	Taxes											
146	Depreciation											
147	Losses on Bad Accounts											
148	Cash Over and Short											
	TOTAL											
	PRORATE OF OVERHEAD											
	TOTAL EXPENSES											
	OPERATING PROFIT AND LOSS											

Form 74: Departmental Statement of Revenues and Expenses.

DAILY REPORT OF SHOP LABOR

_____ 19____

JOB NO.	JOB	CASH JOB CHECK	EMPLOYEES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL HRS.		AMOUNT
	SERVICE UNPRODUCTIVE																			
	DEMONSTRATING, UNPRODUCTIVE																			
	SHOP WORK, UNPRODUCTIVE																			
	IDLE, UNPRODUCTIVE																			
	TOTAL TIME																			

DEBIT		CREDIT	
CASH	$	SHOP EARNING	$
ACCOUNTS RECEIVABLE			
DEMONSTRATING		SHOP EARNING	$
SERVICE		LESS: PAY-ROLL AND DIRECT EXPENSE	
SELLING		GROSS PROFIT	
TOTAL	$	DR. LOSS	

Form 75: Daily Report of Shop Labor.

repair parts, accessories, and labor on a car in the shop. Under the stores department are listed all revenues from the sales of repair parts and accessories which are not put on a car, but are carried away by the customer; by this handling it is assumed that one may determine whether the shop or the storeroom is making a profit. The remaining columns are utilized to classify storage, gasoline, oil, tires, or as many other departments as the management considers it desirable to have the concern divided into; the cost of these items is divided into the departments in accord with the sales. Upon the completion of the distribution, the amount of direct expense charged to the operating departments has been taken care of, as well as the total expense charged against the office and the administrative departments. These latter two groups of expense must be carried by the operating departments and are distributed thereto upon the best information obtainable.

Form 75, Daily Report of Shop Labor, shows the manager the performance of his entire shop for the day preceding the receipt of the report.

The next form, the Sales Record, shown in two parts, as Forms 76a and 76b, is arranged so that the original ticket of sale is posted directly to the account to be charged and the account to be credited. This initial posting is the only one necessary, only the total for the month of each representative account being transferred to the Ledger. All sales of cars, parts, and accessories are posted to their respective columns in this book, the daily totals are recapitulated on the same form, and the final monthly totals only are transferred to their respective accounts in the Ledger. The record must be in balance after each entry thereon is completed.

After the charge tickets have been entered upon the Sales Record, statements in duplicate (original perforated) arranged alphabetically, receive the description and the price of the article sold or of the work performed. At the close of each month, these statements are footed and the footings

SALES BOOK

(DEBIT SIDE) DAILY RECORD OF RECEIPTS AND CHARGES TO DEPARTMENTS DATE _____ 19____

RECEIPTS						DEPARTMENT OF CHARGES				EXPENSES			USED CARS	
CASH SALES	CUSTOMER	TICKET NO	ACCOUNTS RECEIVABLE	BILLS RECEIVABLE	DISCOUNTS	SHOP	GARAGE	STORAGE	USED CAR LOSS	DEMONSTRATING	SELLING	SERVICE	MODEL	AMOUNT

Form 76a: Sales Record (Debit side).

SALES BOOK

(CREDIT SIDE) DAILY RECORD OF STOCK DISBURSEMENTS AND DEPARTMENT EARNINGS DATE _____ 19____

NEW CARS					MERCHANDISE								DEPARTMENT EARNINGS			
MODEL	CAR NUMBER	CARS WHOLESALE	CARS RETAIL	PROFIT	PARTS WHOLESALE	PARTS RETAIL	TIRES WHOLESALE	TIRES RETAIL	PROFIT	GAS	OIL	POSTAGE OFF	SHOP	GARAGE	STORAGE	USED CAR GAIN

Form 76b: Sales Record (Credit side).

(DEBIT SIDE)

CASH BOOK AND JOURNAL

MONTH OF _____ 19 ____

				MERCHANDISE					DEPARTMENTS		EXPENSE							GENERAL LEDGER	
CASH	BANK		NEW										RENT LIGHT	EXPRESS FREIGHT			ACCOUNTS		
ACCOUNT	ACCOUNT	DISCOUNT	CARS	PARTS	TIRES	ACCESSORIES	GAS	OIL	SHOP	GARAGE	SELLING	OFFICE	HEAT POWER	DRAYAGE	COMMIS-SIONS	INTEREST	PAYABLE	ACCOUNT	AMOUNT

Form 77a: Cash Book and Journal (Debit side).

(CREDIT SIDE) **CASH BOOK AND JOURNAL** MONTH OF _____ 19____

	EXPLANATION		CREDIT				RECEIVABLE		OTHER CREDIT ACCOUNTS				GENERAL LEDGER	
			SLIP	CHECK	CASH	BANK					CASH	ACCOUNTS		
DATE	NAME	ADDRESS	NUMBER	NUMBER	ACCOUNT	ACCOUNT	ACCOUNTS	NOTES	INTEREST	DISCOUNT	SALES	PAYABLE	ACCOUNT	AMOUNT

Form 77b: Cash Book and Journal (Credit side).

posted to the Customers' Ledger. The original perforated statement is sent to the customer, showing in detail the transactions of the month. The duplicates, already arranged alphabetically, are filed by months. Individual charges, therefore, are not copied into the Customers' Ledger, and a detailed copy of the original statement is on file for reference purposes.

The Cash Book and Journal, shown in two parts as Forms 77a and 77b, provides for columnar posting of representative items and for detailed posting of sundry items. All merchandise, from cars to gasoline, and all labor performed in the garage and shop, are provided for in the Sales Record. All transactions other than those of selling merchandise and services are provided for in the Cash Book and Journal.

Problems

(*a*) For either one of the two cases commented upon in the chapter, the following is required:

(1) Rule to scale *all* forms necessary under the system selected, this to include those believed as essential other than the ones indicated.

(2) Prepare a system chart showing the relationship of the various forms to each other and the flow of the entries thereunder.

(3) Prepare the requisite Chart of Accounts with accompanying instructions as to use.

(4) Prepare, for each form ruled, a separate sheet containing instructions in detail covering use.

(5) After having done all of the above, prepare a report in which suggestions are made criticizing constructively the system you selected.

(*b*) There are two essentials in managing a garage successfully:

1. A thorough knowledge of the automobile business;
2. The proper application of that knowledge.

The modern garage is arranged so that the office may be enabled readily to keep track and control of all the supplies and cars coming in and going out (Question 1).

The supply room is the most fruitful place in which to find

waste and leakage. Supplies consist of tires and tubes, materials and supplies, automobile accessories. All supplies are ordered from the office. A Perpetual Inventory Record is kept of all supplies. Material is issued only by a properly signed and authorized requisition; it must contain information as to whether it is to be given to the owner of a car, to his chauffeur, or to a garage employee doing repair work upon a car (Question 2).

The gasoline and oil trade is largely transient in character. Because of this fact, a separate requisition is made use of to record all outgoings of gasoline and oil (Question 2).

Garage labor may be divided into two classes:

1. Garage labor
2. Shop labor

The former has to do almost entirely with washing and polishing cars, and with the general operation of the garage building. The latter concerns the repair work entirely.

Each individual job coming into the shop is given a number. All the time spent on any particular job is recorded on a Job Ticket. The office applies the rate against each job, when the particulars thereof come through, and figures the amount of the charge against the customer.

The head shop mechanic keeps the Time Book which is turned into the office weekly and from which the weekly distribution is prepared.

Practically all forms originate in the shop and in the garage, and as above indicated, all rates are figured in the office (Question 2).

The office bookkeeping should be as simple as possible. The original records therein used consist of a Sales Book, a Purchase Book, a Cash Book, and a Journal. Entries for these records originate in two ways:

1. On the basis of transactions originating in the office through correspondence or otherwise;
2. From the original tickets turned in from the shop and supply room.

Every single item of purchases is entered upon the Purchase Record so that advantage may be taken of all discounts allowed by creditors. A Voucher Check is used in making payments. The Customers' Ledger is kept on the loose-leaf plan. Storage, washing and polishing items are kept track of directly in the office. All storage is kept track of by entries being made upon storage contracts. One person is employed in the office as bookkeeper and cashier (Question 2).

Most garages have agencies for some popular car. The usual agency agreement contemplates that the garage pays a certain amount, perhaps $2,000, to the manufacturer as a guaranty that it will sell a certain number of cars each year. The garage in question is no exception to the rule.

New cars are purchased for demonstrating purposes, and at times certain accessories are added to a new car, after purchase, during the period of demonstration. Sometimes old cars are purchased outright but, as a rule, an old car is secured only when given in part payment toward a new car. An accurate record must be kept of car trading profits (Question 3).

You, as an accountant, are called in to devise and rule the forms required in the garage in question. Likewise, in connection with this, you are to prepare a detailed report covering the use of these forms, their size, and the routine procedure involved in their handling. Be so specific in your comment that the bookkeeper will have no difficulty in understanding. Assume, in this connection, that the bookkeeper is experienced in the keeping of records. Assume, also, that the garage is of sufficient size to require all the forms you contemplate using, no more, no less.

Prepare a complete classification of accounts in connection with the other work, assuming a partnership organization, the fact that the partnership has paid $10,000 for the good-will of the business, that it has a lease on the place for 8 years, and that it pays an annual rent of $12,000. Likewise, prepare a chart, as part of your report, showing the interlocking, one with the other, of all forms and records used. The report should contain, also, the necessary monthly statements.

In connection with your work, keep in mind the questions given below:

1. What arrangement of space would you suggest as permitting the office readily to keep track and control of all supplies and cars coming in and going out?
2. What forms are necessary in connection with this activity? How are they handled? Who is in charge of the activity?
3. What entries are necessary to secure an accurate record of car trading profits?

XVII

FOUNDRIES[1]

Foundry variations. Foundry-accounting objects. Departmental segregation. Foundry production. Materials and supplies; labor; overhead. Melting department. Molding department. Core department. Annealing department. Cleaning (finishing) department. Charging factory stores. Expense-account groupings. Statements. Chart of accounts: general operation.

In this chapter, it is proposed to comment more or less generally upon foundries rather than to present any particular system, the practice work required in connection with the laboratory problems being sufficient to bring out this latter phase. The general comments, mostly of a cost nature, form a chapter of more than fair size.

Foundries, as a class, may be grouped as follows:

1. Those operated entirely as jobbing concerns;
2. Those operated as departmental units within manufacturing establishments:
   (*a*) No jobbing work of any kind may be attempted;
   (*b*) Some jobbing work may be taken, in relation to which each such foundry reverts to class 1, as above.

Foundries within the first division are separate organizations, whereas each of those within the second produce castings that later, to a major extent at least, become part of some assembly within another department of the same concern; perhaps the majority of foundries are of the latter type.

In establishments of the second fundamental type, the raw castings (which are the finished product) usually are transferred to a regular storeroom, there to be accounted for in a manner similar to that accorded raw material purchased

[1]Point out the foundry departments which operate on a process basis and those on an order basis. See Chapter VI, *ante*.

on the outside. If a section of the Stores Ledger is set aside for record purposes thereover, it is usual to maintain such division upon the basis of pattern numbers. Regular stores are secured in the usual manner, as through requisitioning the purchase department and the placement later of Purchase Orders.

Varied foundry accounting plans have been worked out by different individuals; an attempt to secure a consistent picture through reconciling these upon the basis of only a casual scrutiny is most apt to result in considerable confusion. A close study, however, shows that the particular differences relate more to details than to anything else.

If one remembers the fundamental variation suggested above as existing between the two types of foundries, and couples with this the fact that where a manufacturing concern has its own foundry, the latter should be treated as a plant unit separate and distinct from the other units that may be in existence, the general accounting (and cost) problems encountered become so similar that, at least as to these, both classes may be commented upon together. But this assumption that foundry accounts (and cost) may be commented upon primarily in a general manner must recognize the fact that foundry product varies considerably.

FOUNDRY VARIATIONS

As to product, foundries may be divided generally into:

1. *Brass*
2. *Malleable.* Grey-iron castings when annealed become malleable castings. Steel foundries, also, may utilize the malleable feature.
3. *Steel*
4. *Iron.* These are known as grey-iron (cast-iron) foundries.

The variations as above displayed are the result either of the metals used or of the class of castings made. Although the fundamental accounting principles for each of

these are somewhat similar, one must recognize that as between foundries certain changes in terminology are desirable, and that numerous details require alteration so that conditions may be met expeditiously. In brass foundries, for example, the alloys or mixtures may cause one or more special problems each of which necessitates special treatment; if crucibles are used, due allowance must be made for their mortality. Again, in a brass foundry, the value of the scrap (sprue, heads, gates, and so forth) is of considerably more importance than in a grey-iron foundry; therefore, there is more reason in the former case than in the latter one for being particularly accurate in the weights of such items.

Further, in a malleable foundry there may exist the problem of accounting accurately for monthly production, a problem that may not exist at all in a foundry of another type; in a malleable foundry, the annealing process consumes so much time that a complete casting may still be in process at the end of the month, a condition which is not serious in other foundries. Also, a differentiation must be made in the handling of cleaning costs in such a foundry as compared to those costs in foundries of the other types; there is considerable difference in such costs before the annealing process than after the process is completed—hard cleaning costs as against soft cleaning costs. In a malleable foundry, therefore, average costs may be the only practical solution toward which to strive, whereas, in a foundry of another type, costs may be secured which are more definitely connected with product units.

Another differentiation in treatment is noticed in the handling of sand cost in a steel foundry as compared to the handling of this item in other foundries. The usual disposition in the average foundry is as an overhead item, whereas in a steel foundry making castings the sand cost should be separated from the overhead, due to the fact that in the latter instance as compared with the former, more sand is used and it requires more preparation. In a steel foundry,

it is said that the volume of sand used is practically in direct proportion to the tonnage melted; hence, a direct charge to orders is rendered possible.

The expense for flasks (the wooden or iron frames in which molds are prepared) and patterns (wooden models of castings) inclusive of repairs and fixed charges may be considered as a part of molding burden or as part of general burden, the former probably being a more correct treatment than the latter.

In a jobbing foundry, the cost of new patterns develops no problem, provided the customers own the patterns, as is apt to be the case. But in a foundry which is part of some manufacturing concern, the cost of new patterns is related directly to foundry cost even though perhaps apportioned thereto a little at a time.

Where a foundry owns its patterns, the cost of new ones should be accumulated upon separate orders, whereas the upkeep of these may be included as part of the burden of the molding department. To some extent, patterns are an asset which increases in value as new patterns are added to the line carried, provided the foundry's line also is being extended; but where the foundry's line is fully established, it is doubtful if new pattern cost should be considered as an asset, it being more satisfactory to consider such cost as related to maintenance.

FOUNDRY ACCOUNTING OBJECTS

These vary greatly in different foundries, so that which obviously is a necessity in one may be of only small importance in another.

Nevertheless, the following are fairly representative:

1. In a jobbing foundry, the profits on each customer's order should be known, as a general proposition. But it should not be forgotten that the importance of this information is a relative matter, being dependent upon such things as community, kind of foundry, number of customers for whom work is done, competi-

tion, and so forth. In other foundries, on the other hand, the customer element should be replaced by the determination of costs by lines.

2. In a jobbing foundry, where the price quoted to a customer is a uniform one fitted to the requirements of that customer, individual job costs are not of paramount importance, it being a better policy to secure such costs infrequently rather than currently. But where this situation is not found, individual casting costs are desirable or costs of like groups of castings. On the one hand, an infrequent check against the average cost is sufficient, whereas on the other, such a check is useless.

3. The cost of foundry operations should reach the management through daily reports, these being summarized weekly and monthly. Other information of daily value to the management which, however, is of a statistical nature, relates to such matters as kind and quantity of material charged; ratio of metal to fuel; amount of metal poured from daily melt; proportion of bad castings made to good, and so forth. The relation between the direct molding labor and the direct core-making labor, and the sundry indirect operating costs may uncover the clue that will explain fluctuation in he volume of work.

DEPARTMENTAL SEGREGATION

In devising a system of accounts for a foundry, the principle of departmentalization should be applied, since only by so doing is it possible to introduce therein a production order cost system. It is only through the utilization of such a system that one can hope to secure the reasonable determination of costs by orders.

Many foundries attempt to determine costs either by the ton or by the pound, although the consensus of opinion does not seem to favor doing this, it being assumed as a practice both dangerous and useless. Accurate costs cannot be secured, it is said, since no two castings can be run with the same percentage of loss, or with approximately the same costs for molding, core-making, and finishing. Since calculations are made upon the basis of good castings produced, those which have been rejected or spoiled are not utilized in the scheme of showing up losses that are due to such causes.

Also, managerial control is an impossibility, and selling prices cannot be set with any degree of accuracy.

Certain separate and distinct steps are necessary in the fabrication of a casting, regardless of kind, and in each of these, certain peculiar problems arise that ought to be accorded separate accounting treatment. In the first instance, certain metals must be melted; this operation has no direct relationship to the subsequent ones. The molding department, in turn, has numerous problems which have no connection with melting or with the departments which may follow that of molding in order of flow. The same may be said of core-making, annealing, and finishing.

In view of this, a logical separation exists relative to the following operative activities:

1. Melting
2. Molding
3. Core-making
4. Annealing (malleable and steel foundries)
5. Cleaning-finishing

These separate and distinct phases in foundry work may be considered as the desired departmental segregation.

FOUNDRY PRODUCTION

If the production scheme is not adequate, the accounting plan will be at fault, and the management cannot be efficient. A production-order cost system requires Production Orders for indicating, or giving the needed authority for, the work to be produced. Next, as is usual in any factory, a set of Maintenance or Standing Expense Orders is essential for the accumulation of all indirect costs. Also, a set of forms of various kinds is necessary, as circumstances require—time cards, inspection reports, defective work reports, and so forth—to make the accounting system complete. It is essential, also, to have available a card record of some kind covering the patterns on hand so arranged and indexed that they may be located quickly; a variation in

record content is required, dependent upon whether the patterns are customer-owned or shop-owned.

In a jobbing foundry, for example, when an order is received for castings, a Production Order should be issued before work is commenced; this may be in any manner consistent with the organization plan of the concern; one illustrative scheme would be:

Original—to foreman, to be filed by him;
Duplicate—to foreman, to be used as a Pattern Requisition;
Triplicate—to be retained in the production department.

A summary of these orders may be kept classified by customers or by castings' weight or grade of metal; these weights and grades may be indicated by a color scheme. A daily analysis of this summary is useful in planning subsequent days' production.

Considerable variation may be encountered where the foundry is a department within a manufacturing company. Hereunder, it may be assumed that the stores department issues the Manufacturing Requisition under which the foundry is ordered to produce certain castings. Such a requisition need not be complicated in form inasmuch as what is wanted thereon in the way of information would be: Requisition Number; Date; Kind; Number of Pieces; Pattern Number; Comment; Date Required—Date Filled.

Three copies of this requisition or order may be issued, these being disposed of as follows:

Original—to foundry superintendent;
Duplicate—to foundry superintendent; returned by him to issuance point;
Triplicate—retained at issuance point in an "unfilled" file.

MATERIALS AND SUPPLIES; LABOR; OVERHEAD

Material costs primarily are concerned with pig iron, scrap, and fuel which go into the cupola (the melting blast furnace). Also, considerable expenditures must be made in respect of supplies for molding and core-making, furnace

linings, brick, fuel for heating, and supplies necessary to make repairs to buildings and equipment. The principal cost of melted metal is the material charged to the cupola. To this are added such costs as labor of cupola gang, repairs to cupola, and sundry fixed charges. Further is offered subsequently on these other costs when the particular representative departments are considered.

Raw materials should be controlled properly. The principal ones should be so stored that no delay is caused in selecting those that will permit the production of melted metal of the requisite analysis. Where possible, each carload of raw material received should be labeled with its related car number, and be accounted for, on the books, by this number as well. If these factors are not recognized, the raw-material control is inadequate and, added to this, the proper check cannot be secured on metal quality melt by melt. In other words, each lot of raw material received should be accounted for by car number, both in storage location and in the stock record.

Raw-material cost includes invoice price, freight and handling charges, and storing cost. As material is requisitioned for a melt, the specific lot from which drawn should be credited therefor, the offsetting charge going against the particular Production Order. The correct segregation of material permits the issues to be priced properly melt by melt, and aids materially in keeping an accurate book record of inventories which may be checked out in part from time to time as each carload pile is exhausted.

The raw-material angle of the case requires the introduction of comprehensive forms, inclusive of a Monthly Melt Record, so that the proper charges and credits may be made for materials.

The cost of labor should be separated carefully as between direct and indirect. The distribution of the pay-roll comprehends the following possible departmental divisions:[1]

[1]Review lines of authority and responsibility as per Chart in Form 46, Chapter IX, *ante*, of Foundry Departments.

1. Cupola (melting department)
2. Molding
3. Core-making
4. Cleaning
5. Pattern
6. Carpenter shop

In connection with molding and core-making, it is generally found desirable to separate labor further so that an allocation may be made against individual Production Orders. The same may be true in the cleaning department when large work comes in upon which the cleaning item is important.

Indirect labor should be charged to pool accounts (burden centers[1]) to be distributed therefrom later to particular jobs, say, on the basis of pounds of good castings made. Exceptions to the above are found in the molding and core-making departments and possibly in the cleaning department. Indirect labor connected with molding and core-making is chargeable to burden centers in these departments from which it is diffusable against costs by means, say, of an hourly burden rate.

Burden charges form a fairly important portion of product cost. Repairs to cupola and equipment generally are heavy, and depreciation is rapid. The frequent mistake in the handling of overhead is in using some average loading proportion; apportioning overhead in this manner may not be radically in error where a uniform product only is handled; in fact, a fairly good control may result. But where light and heavy castings are produced, burden costs must be separated as well as labor costs if the respective departments are to be charged therewith in proportion to the work actually done therein.

Overhead, basically, is distributed to the various departments by many of the different means available therefor, as floor space, and so forth. Land and building charges and fixed charges on equipment, after determination, are assessed

[1]Review Chapter XI, *ante*, on location of indirect-labor accounts.

to departments according to space occupied and the value of equipment therein used. The foremen's labor cost is part of departmental burden. Cleaning labor may be lumped, and assessed with other general charges, say, as a cost per 100 pounds on all of the work done or, if large castings are handled, it might be expeditious to charge it up there against separately in a manner similar to that of molding and core-making labor; under this second possibility, foremen's labor cost is chargeable to burden as in other departments.

Only infrequently can burden rightly be allocated departmentally on the basis of direct-labor hours. On the other hand, as soon as the overhead charges have been diffused against the departments, each departmental amount (machine overhead excepted) may be distributed to product upon the basis of departmental direct-labor hours.

After a certain amount of time has passed subsequent to the beginning of operations, overhead distribution rates may be worked out for the various departments, these being based upon the normal maximum production for each department. Frequently, all the overhead accumulated in a department will not be absorbed by the application of such an established rate; the answer is that, if so, normal maximum production is not being reached in the departments affected.

MELTING DEPARTMENT

In this department occurs the first manufacturing process, the melting of the raw material, as pig iron in a grey-iron foundry. The cupola is charged through the top with layers of pig iron alternating with layers of coke, and sundry scrap materials as gates, sprues, and so forth, that are on hand from the molding activity or from previous runs of the cupola.

The first layer of fuel at the bottom of the cupola is set afire, and by a forced draft the melting proceeds. Naturally, the composition of the molten metal is determined pri-

marily by the mixture of the charge. The molten metal gravitates to a hollow at the cupola floor below the pipe through which the blast is introduced. On top of the molten metal floats the so-called slag which must be drawn off before the metal is taken out, this being through a spout located above that from which the metal is run. The molten metal is drawn off into ladles, taken to the molds, and poured into these latter. The slag, although a sort of by-product, has but small value; it may be purchased for road-building and for the making of concrete.

In converting metal into a molten condition in the cupola in the melting department, it seems advisable to keep the material cost definitely separate from the cost of conversion, the better to account for variations in total cost that frequently arise. Since the conversion cost seems more stable, generally, than the material cost of a melt, by separating the two, the reasons for notable variation month by month may be determined quickly.

One matter of importance in the present connection is determining the logical point at which conversion cost shall end. In some cases, the pouring gang belongs to the molding department rather than to the melting department; again, in some foundries (steel casting) conversion cost includes delivering metal to the molds, whereas in others (iron) the conversion cost ends at the spout.

In this department it is necessary to provide for the accumulation of the following costs and expenses:

1. Cost of raw materials;
2. Cost of melting, consisting of operation labor and overhead. The operation labor generally may be subdivided as cupola, open hearth, and crucible, depending upon the type of foundry;
3. Expense of service departments, as blacksmith shop, laboratory, and possibly slagmill.

The melting department cost of a particular Production Order exclusive of direct labor (assuming a cupola proposi-

tion) may be composed of the following items, more or less detailed as the case justifies:

Pig iron, scrap, and ferroalloys used;
Cupola fuel;
Delivering metal and fuel to charging floor;
Sundry supplies, as fluxes, and so forth;
Repairs to cupola, charging floor, cupola cranes, tools, and so forth;
Laboratory expense;
Overhead, as insurance and taxes, depreciation of buildings and equipment, maintenance of land and buildings, light, heat, power, shop-office expenses, and stores-department expenses.

The metal cost per pound at the cupola spout must take into consideration the actual melt loss. This contemplates either one of two possible procedures:

1. To determine the actual weights of gates, heads, sprues, splashings, and so forth, or
2. To use an estimated percentage to cover these losses.

In the first instance, the total cost of the metal is secured and from this the scrap value of the above items is subtracted. The remainder divided by total weight of output gives the average net pound cost at the spout. In the second case, a fairly elaborate procedure is necessary to secure the per-pound spout-metal cost. A number of tests are run to determine a fair average weight loss percentage. This percentage is deducted from the total weight of metal melted to secure the weight of metal poured. The total weight of the output then is deducted from the total weight of metal poured, the remainder representing total weight of the various kinds of scrap mentioned above.

The net metal cost should be set out on some form of Cost Sheet, so that its components are readily noticed. The pounds of good and bad castings plus sprue should equal in quantity the total melt which at the per-pound rate should result in the conversion cost. To this would be added the total raw material melted, the sum secured representing the total cost of the metal melted. From this total cost the

scrap is deducted on a per-pound cost basis, so that the final figure results in the net metal cost.

MOLDING DEPARTMENT

In this place, the molds are made and the molten metal then poured into them. It is the task of a molder to take a mold (flask) and prepare in it what may be called a sand impression of the casting desired so constructed that when this sand mold is filled with metal the exact casting wanted results. A flask is composed of two parts or sections, these being so built that the two parts fit together—the upper one being the cope and the lower the drag.

The cope and drag are each filled with sand that has been prepared for this purpose. Then a pattern equal to one-half of the desired casting is taken and an impression made with it in this sand. Naturally, when the cope and drag are fitted together, the hollows in the sand in the middle of the mold should resemble the casting wanted. Hollows in a casting occur through the use of cores, these being placed where wanted in the sand impressions. , Cores are of sand, hand or machine made, and are baked so as to retain their forms.

When the two sections of a flask have been fitted together, and all is ready for the pouring, it is necessary to make certain that a gate has been provided through which to pour the metal into the flask. This is merely a hole at one end of the cope; also, a similar hole—a rise—is to be found at the other end of the cope. When the metal is poured, it goes in through the gate, and its quantity is checked by watching the rise; as soon as the metal comes up through the rise far enough, the pouring ceases.

In this department, the direct labor of molders and helpers, and overhead expense, must be taken care of properly so that the individual patterns may be charged therewith; in this respect, basically, the problem in this department differs markedly from that in the melting department. The

direct-labor charge assignable to patterns may be determined in any one of the following ways:

1. Piece rates, or actual cost;
2. Average cost;
3. Estimate.

The molding overhead may be charged to orders either by direct-labor hours or by castings' weight; for example:

1. *Direct-labor hours expended*
   Salaries of foremen; heat and light; maintenance of grounds and buildings; insurance and taxes related to buildings, compensation and liability; depreciation of buildings; clerical salaries in the department; general expense; losses on defective castings when not possible to allocate these to definite production orders.
2. *Castings' weight*
   Expense materials; operation and maintenance of handling equipment; repairs to ladles; power; repairs to shafting, belting, etc.; unloading, handling, cutting and mixing sand labor (perhaps the unloading is part of sand cost); expense of stores and shipping departments; insurance and taxes on machinery and equipment; depreciation of equipment; repairs to tools and patterns.

The application of molding expense may work out as under:

1. *Direct-labor basis*—applied as a percentage representing the relation of normal total indirect expense to normal total direct molding labor in the department.
2. *Weight basis*—applied as a certain rate per pound based on the relation of normal indirect manufacturing expense to normal weight of production of the department.

Where molding machines are used in the production of castings, a machine rate may be charged to each order to absorb the machine burden separately from that of the remaining department burden. This machine-burden rate, however, should be composed only of the following: Depreciation of equipment; maintenance of equipment; power equipment.

Under certain circumstances, three items require special treatment:

1. *Sand cost.* In a steel casting plant, as above shown, sufficient comment has been made. Briefly, a separation thereof from general overhead is desirable.
2. *Pattern cost.* Where a standard product is produced, a recurring pattern maintenance cost is necessary.
3. *Flask cost.* This may be handled in a manner similar to that accorded pattern cost. Special flasks for special jobs are chargeable directly thereto, as further usefulness is doubtful; but the usual run of flasks should be so handled that a unit cost per pound of good production will result rather than to write their cost down through department burden.

CORE DEPARTMENT

Inasmuch as this activity seems to be more of a hand-work proposition than a machine one, the costs in this department consist, usually, of direct labor and overhead. The direct-labor cost may be determined in any one of the three ways suggested above for the molding department direct labor. The overhead might be distributed upon the direct-labor hour basis, the application being to cores made for the various orders coming through; this application may be in the form of a percentage representing the relation of normal total indirect expense to normal total direct core-labor of the department. Where cores are made by machines, machine rates must be established along the same lines suggested for those to be used in connection with the molding department machines.

Further, the sand used in core-making, usually, should be considered as part of general burden; but a separate treatment thereof is required in the molding department of a steel-casting foundry. Sand, ordinarily, is consumed practically in direct ratio to the core-maker's labor time on cores for each order.

The core department expenses comprehend such items

as: expense materials; foreman's salary; wages of oven tenders and core pilers; fuel for the ovens; labor of mixing and unloading core sand; general expense; maintenance portion related to buildings and grounds; insurance and taxes; depreciation; light, heat, and power; operation and maintenance of cranes; repairs to tools, and so forth; salaries of department clerks; stores expense; defective castings the result of defective cores.

ANNEALING DEPARTMENT

Since this operation in a steel-casting foundry consists of loading and unloading the cars by means of an electro magnet, the determination of annealing cost is a fairly simple proposition. Frequently, some product of this type of foundry is annealed and some is not; if so, a separation must be made and a record kept as between the two classes of castings. Annealing costs are based upon poundage.

In a malleable foundry, the annealing cost determination is of considerable import inasmuch as the operation is a fairly costly one. Further, a clear distinction must be made between the cost of packing the annealing pots and that of packing the furnaces; to this end, a tonnage handled separation is requisite. Costs are on a poundage basis—good castings.

CLEANING (FINISHING) DEPARTMENT

The cleaning operation contemplates removing all sand adhered to the castings, the fins, sprue, gates, risers, and so forth. The process consists of placing the castings, varying in size and weight, in a steel barrel, and revolving the latter, of sand-blasting the castings, of cleaning them by the use of air chisels, emery wheels, and so forth, depending upon the nature of the castings and the kind of cleaning that has to be done. Defective castings are cleaned so as to be returned to the cupola for remelting. Finished cast-

ings passing inspection go either to stores or to the shipping department.

Separate costs frequently are not secured in this department, although it seems proper to assume that they should be, even though not necessarily fairly distributable to Production Orders in the same manner as may be other costs. From one point of view, cleaning costs are not direct and, therefore, not chargeable direct to specific orders; nevertheless, it is often possible to allocate the labor charge in some reasonable manner to particular orders. Further, dependent upon the type of foundry involved, the handling of the cleaning costs is found to vary in practice; for example, in grey iron foundries and in malleable foundries the general rule seems to consider the charges too small to warrant their attachment direct to each pattern, whereas, in steel-casting foundries the opposite seems to be the rule.

A figure representing direct cleaning labor may be arrived at in the following ways:

1. If piece-work prices cover the majority of patterns, these may be utilized; where patterns are not thus covered, estimates may be prepared.
2. If the piece-work price basis seems impracticable, a ratio basis may be utilized to arrive at a reasonable figure—the ratio of the total cleaning labor exclusive of expense labor to the total molding and core-making labor applied to the direct molding and core-making labor of each casting.

Another method of application of these costs may be more desirable at times than the above. But in cases where the direct cleaning labor against individual orders or classes of castings cannot be determined satisfactorily, the direct cleaning labor may be added to the cleaning expense after which the total may be distributed as an element of molding overhead on a direct-labor basis. Cleaning expense (not labor) may be diffusable either upon a machine-rate basis or upon a direct-labor hour basis.

The frequent practice of distributing cleaning expense on

the basis of weight of castings cleaned may be subject to considerable error since as much time may not be consumed in cleaning a heavy casting as in cleaning a light one.

Cleaning expense consists of such items as: expense materials; repairs to equipment; salaries of foremen; general expenses; maintenance of grounds and buildings; operation and maintenance of cranes; light; heat; power; insurance; taxes; depreciation of buildings and equipment; stores expense.

The cost of finishing—straightening, punching, drilling, reaming—arises in connection with certain castings. Such cost is chargeable directly against the work requiring this additional effort. Hence, finishing labor is direct, and applicable directly to orders requiring such work—on the basis of direct-labor hours.

A cost element of some importance is that of inspection. When the rough castings are trimmed, this inspection should be made; if thus done, the added expense of annealing, where involved, of defective castings which eventually must be thrown out, would be saved. An Inspection Report should be prepared of all castings trimmed and inspected.

CHARGING FACTORY STORES

A slight variation hereunder is encountered depending upon whether all castings made are to be used later in the factory in the fabrication processes or a portion thereof is to be held for sales purposes. In outline form, the following suffices:

1. Charge Foundry Production in Process for all foundry costs.
2. Credit Foundry Production in Process for all good castings finished, and:
   - (*a*) Charge Factory Stores (if castings held for production purposes) or
   - (*b*) Charge Finished Castings (if castings held for sale or partly for sale and partly for production).

EXPENSE ACCOUNT GROUPINGS

As many groups of expense accounts should be utilized as will tend to aid in managerial control toward keeping expenses down within reasonable limits. Naturally, a general variation in the number of accounts carried, and in their handling, occurs as between foundries operating as separate units or plants and those which are but a department within manufacturing plants; in the first instance, the number of accounts needed will be more than in the second.

Numerous illustrative separations hereunder have been suggested in the various department sections commented upon above. The student will recognize that clearing accounts are fairly numerous—that the principle of the pool account with expense distribution sheets is utilized extensively in a fairly orthodox manner. It should be borne in mind that "dumping" accounts are to be deplored, even though their use may seem to simplify or lighten the task of distribution. Expenses distributable to departmental burden accounts in departments using the work-hour basis of application are better distributed upon the basis of total labor hours than on that of direct-labor hours. In a later section, an illustrative general chart of accounts is shown in which the operation accounts are given prominence.

STATEMENTS

The accounting (and cost) plan for a foundry must provide for summarizing various records. Efficient management is promoted only through the preparation and use of statements of cost and of factory expense.

The total cost of the cupola is distributed to Production Orders or to Job Cards, the total representing a credit to the Cupola account and a charge to the individual orders. A Summary of Production Orders, covering labor and departmental burden, provides the credits to the labor and burden accounts, and the total cost of the finished castings

is chargeable, say, to a Cost of Goods Sold account (in a jobbing foundry) or to the Factory Inventory.

When work is not completed within the month in which it is started, material, labor, and burden costs must be brought forward into the following month as an in process inventory; this inventory should be both by costs and weights values, the General Ledger control thereover agreeing with the Job Cards' balances total. A physical inventory should be taken from time to time to check up these figures as actually being in existence.

Each Cost Card or Cost Sheet should show such items as selling price, cost of sales, gross profit, loss from returns and allowances, and net profit. These items should be proved, through summaries, against the Ledger controls thereover.

The Cost Statement should show at least the average cost per pound of good castings produced for each of the following groups (commented upon above) subdivided as desired for use:

Cost of metal at spout
Direct labor
Molding department
Core department
Cleaning

The Factory Statement should show total foundry overhead expenses subdivided by classes as desired. A statement for the pattern shop may be prepared separately.

CHART OF ACCOUNTS: GENERAL OPERATION[1]

The partial chart or code of accounts offered below for illustrative purposes is based upon the Standard Foundry Cost System published by the American Foundrymen's Association. It cannot be said that the suggested outline will fit every case encountered, yet it is susceptible of considerable expansion as the requirements of a particular case may

[1]Compare general method of treatment with that shown in Chapter XI, *ante*—set out in Mercantile Accounts versus Manufacturing Accounts.

require. Inasmuch as certain accounts are familiar to all accounting students, the entire chart is not submitted:

1. Current Assets
   (As circumstances require)
2. Inventory Assets
   1. Melting Stock Metals
   2. General Stores (subdivided as circumstances require)
   3. Finished Castings
   4. Work in Process
3. Fixed Assets
   (As circumstances require)
4. Deferred Assets
   (As circumstances require)
5. Intangible Assets
   (As circumstances require)
6. Current Liabilities
   (As circumstances require)
7. Fixed Liabilities
   (As circumstances require)
8. Reserves
   (Separate accounts for depreciation of fixed assets reserves and for bad debts reserve)
9. Capital Liabilities
   (Classes of capital stock)
10. Surplus and Profit and Loss Accounts
    1. Surplus
    2. Income tax
    3. Dividends—Preferred Stock
    4. Dividends—Common Stock
    5. Profit and Loss
    6. Adjustment Account
    7. Casting Sales
    8. Cost of Castings Sales
    9. Miscellaneous Sales
    10. Cost of Miscellaneous Sales
    11. Freight Out on Sales
    12. Administrative Expense
    13. Selling Expense
11. Financial Profit and Loss Accounts
    (As circumstances require—both income and expense)

12. Operating Expense Accounts
    1. Cost of Melt
    2. Cost of Melt Credits
    3. Molding Burden—Direct Labor
    4. Molding Burden—Direct-Labor Credits
    5. Molding Burden—Machine-Hour
    6. Molding Burden—Machine-Hour Credits
    7. Molding Sand Cost
    8. Molding Sand Cost Credits
    9. Flask Cost
    10. Flask Cost Credits
    11. Core-making Burden—Direct Labor
    12. Core-making Burden—Direct-Labor Credits
    13. Core-making Burden—Machine-Hour
    14. Core-making Burden—Machine-Hour Credits
    15. Finishing Cost
    16. Finishing Cost Credits
    17. Annealing Cost
    18. Annealing Cost Credits
    19. Power, Heat, and Light Expense
    20. Pattern Shop Expense
    21. General Expense
    22. Expense Ledger
13. Sundry General Ledger Accounts

A brief comment upon certain of these accounts follows, for the purpose of giving the reader some idea of their operation:

(2-1) Melting Stock-Metals

Debits:

(*a*) Open with cost value of all melting stock or metals on hand;

(*b*) All purchases of melting stock-metals;

(*c*) Transportation charges on incoming melting stock (distributable according to invoices);

(*d*) Unloading charges in case of long-term supply;

(*e*) Returns to stores.

Credits:

(*a*) All withdrawals;

(*b*) All returns to vendors.

Balance:

Value of melting stock-metals on hand.

The following subdivisions may be maintained
Pig Iron
Purchased Scrap
Foundry Scrap
Ferromanganese
Ferrosilicon
Other Melting Stock as Required

(2-3) Finished Castings

Debits:

(*a*) Open with physical value of all finished castings on hand;
(*b*) Deliveries per closed Production Orders;
(*c*) Returns of good materials from customers.

Credits:

(*a*) Material shipped.

Balance:

Cost value of finished goods on hand.

(2-4) Work in Process

Debits:

(*a*) Open with cost of goods in process;
(*b*) Total amount of molding productive labor and core-making; productive labor per summary of Time Cards on Pay-Rolls;
(*c*) Cost of melt for month at predetermined rate;
(*d*) Proper proportion of following expense accounts at predetermined rates:
Molding Burden—Direct-Hour
Molding Burden—Machine-Hour
Molding Sand Cost
Flask Cost
Core-making Burden—Direct-Hour
Core-making Burden—Machine-Hour
Finishing Cost
Annealing Cost
(*e*) Cost of castings returned by customers (if a finished castings account not carried).

Credits:

(*a*) Cost of castings shipped; if finished castings account is not carried; otherwise, with cost of finished castings delivered to finished castings stores;
(*b*) Scrap value of bad castings and sprues returned to metal stock;

(*c*) Losses due to defective work or other errors in service distributable to the department expense involved;

Balance:

Cost of finished castings on hand and in process (if finished castings account not carried); otherwise, of castings in process.

(10-6) Adjustment Account

Debits:

(*a*) With any determinable decrease in any particular account not traceable to some other account;

(*b*) With necessary adjustments of any nature.

Credits:

(*a*) At closing periods with any determinable increase in any particular account not traceable to some other account;

(*b*) With necessary adjustments of any nature.

Balance:

Represents adjustments necessarily made.

12. OPERATING EXPENSES

Explanatory note. Accounts 12-1 to 12-18, inclusive, cover the actual operating accounts—those that appear in the actual Cost Sheet either by pound, percentage, or hour.

In order to make it easy to secure the "to date" figures in the monthly statements, two Ledger accounts are maintained for each expense or burden account. One, bearing simply the name of the account, is for debits only, except where a credit is necessary to adjust or correct the debits. The other, bearing the account name followed by "credits," is for credits only of the transfers to work in process, except when a debit may be necessary to adjust or correct the credits.

The result is an accumulating figure for each kind of account. This provides, from the General Ledger Trial Balance, the figures to use in the statements of "total to date"—the monthly figures coming from the footings for the month's transactions, which must balance with the entries for the month in the Ledger account controlling each expense account.

It is quickly seen, therefore, that the difference between the "debit" and "credit" account for each expense account is the over- or under-absorbed expense, and will and must agree with the monthly statements.

Accounts 12-19 to 12-22, inclusive, need but a single account as they are to be entirely closed out each month. They are simply collective accounts serving as mediums to split down these expenses to the actual operating accounts.

(12-1) Cost of Melt

Debits:

Melting stock metals used (Requisitions)
Labor (Time Cards)
Miscellaneous Materials (Requisitions)
Charges direct from Purchase Register (Expense Ledger Charge Slips)
Apportioned Charges

Credits:

Adjustments of debits only

(12-2) Cost of Melt—Credits

Debits:

Adjustments of credits only

Credits:

Value of metal poured at the standard predetermined rate

Accounts 12-3 to 12-18 have practically the same set out for the debits and credits as above; the difference being so slight, no comment is offered.

(12-19) Power, Light and Heat Expense

Debits:

Labor (Time Cards)
Material (Requisitions)
Charges direct from Purchase Journal (Expense Ledger Charge Slips)
Apportioned Charges

Credits:

Net balance at the close of each month distributed to the various operating accounts as explained elsewhere

Balance:

There should be no balance.

(12-20) Pattern Shop Expense

Debits:

See 12-19

Credits:

Amount which charges the Molding Burden—Direct Labor

Amount which charges the Core-making Burden—Direct Labor
Amounts which charge the Flask Cost
Amount of residue as directed

Balance:
There should be no balance.

NOTE: If the pattern shop is operated as a producing department, and not solely as a cooperating department, the accounting should be charged to correspond to the condition, and provision should be made for:

Pattern Production Orders
Pattern Production Labor
Pattern Shop Expense
Pattern Work-in-Process Material

and the cost compilation changed accordingly

(12-21) General Expense
See account (12-19)

(12-22) Expense Ledger Account

Debits:
Total monthly charges made direct to operating accounts, which charges are represented by Expense Ledger Charge Slips

Credits:
Total of Expense Ledger Charge Slips, charging the various operating accounts.

Balance:
If any balance exists, it is in error, and the Charge Slips in the file for the month should be checked back to the Purchase Journal

The journalizing procedure in connection with the above accounts should follow a specified sequence, this being shown as under:

Pay-roll
Materials and supplies
Liability insurance
Depreciation
Taxes
Fire insurance
Power, heat, and light
Pattern shop expense

General expenses
Departmental expenses
Reversing foundry scrap
Finished castings
Shipments

It is not the purpose to show all the details of all the Journal entries required; hence, but two of these entries are offered for illustration:

Pay-Roll
  Debit
    Work in Process (direct labor)
    Cost of Melt (conversion labor)
    Molding Burden—Direct Labor
    Molding Burden—Machine-Hour
    Molding Sand Cost
    Flask Cost
    Core-making Burden—Direct Labor
    Core-making Burden—Machine-Hour
    Finishing Cost
    Annealing Cost
    Pattern Shop Expenses
    Power, Heat, and Light Expenses
    General Expenses
  Credit
    Accrued Pay-Roll
Materials and Supplies
  Debit
    Cost of Melt (melting and conversion materials)
    Molding Burden—Direct Labor
    Molding Burden—Machine-Hour
    Molding Sand Cost
    Flask Cost
    Core-making Burden—Direct Labor
    Core-making Burden—Machine-Hour
    Finishing Cost
    Annealing Cost
    Pattern Shop Expenses
    Power, Heat, and Light Expenses
    General Expenses
  Credit
    Melting Stock Metals
      Pig Iron
      Purchased Scrap

Foundry Scrap
Ferromanganese
Ferrosilicon
General Stores
Any other controlling material accounts
Expense Ledger

Test Questions

1. What cost unit would you recommend for foundries?

2. In calculating the direct expense for a grey-iron castings foundry, which is correct: the per-pound basis, the rate-per-hour basis, or the percentage basis? Give reasons and explain fully.

3. What cost unit would you recommend for a blast furnace?

4. Enumerate the components of a blast furnace "relining fund" account.

Problems

(*a*) Prepare a chart of accounts for a foundry partnership.

(*b*) You are instructed to design and install a system of cost and office accounts for a malleable castings company. Name and describe the forms you would use. Also, sketch the Cash Book, Voucher Register, Journal Voucher, and Sales Invoice.

(*c*) Give a *pro forma* Monthly Operating and Profit and Loss Statement for the following, introducing a statistical statement showing unit costs, or any other useful cost data which may be practical:

(1) Foundry;
(2) Rolling mill producing steel rails.

(*d*) Present a Monthly Statement of Profit and Loss for a blast furnace (pig iron).

(*e*) The Blank Stove Foundry manufactures stoves, heaters, ranges, and grates. It also does a jobbing business.

The operating departments comprise the following: Melting (cupola); molding (foundry); cleaning; polishing; nickeling; mounting; wood patterns; metal patterns.

The raw material consists of pig iron, foundry scrap, outside scrap, and gates. Fuel consists of wood, coal, and coke. Raw material is unloaded into sheds along the railroad siding, no regular type of storeroom being used. Part finished and finished stock are kept in a storeroom.

The first department is the cupola, a perpendicular furnace in which iron is melted. As soon as the iron is melted and ready to pour, it is called a "heat." The molten metal comes out

through an opening near the bottom of the cupola, being run into crucible pots which are carried by the molders to the various molds and poured therein. All cupola work is day-work.

The next department in order is the molding room or foundry. The molders work on their molds during the day until fairly late in the afternoon when the heat is ready. Work in this department is both piece-work and day-work.

After the molds have been filled and cooled, the articles are trundled into the cleaning room. Work in this department is day-work. Small articles like stove plates and parts are cleaned by machine, being tumbled around in a barrel-like contrivance. The larger pieces are cleaned by hand with wire brushes. After being cleaned, all castings are inspected, those found defective being set aside. The cost of molding defective castings is charged back to the respective molders, and the castings are taken to the scrap pile for remelting.

Next, the castings go to the polishing room where emery-wheeled lathes polish the rough edges and certain of the surface parts according to the required finish called for. Work in this department is day-work.

At this point, if the article is part of a stove, it is sent to the storeroom as part finished stock. If the article was produced on job-work, and is complete in itself, it is sent to the stock-room as finished product.

In the nickeling department, stove name plates are nickeled, work here being day-work.

In the mounting or assembling room, the stoves are assembled. A single stove requires on the average about 60 pieces. Work is on a piece basis.

When a stove has been assembled and finished, it is sent to the finished-stock room, there to await crating and shipment.

The records and forms used in this foundry for the most part comprise the following:

(*a*) Related to general factory
- Purchase Requisition
- Purchase Order
- Material Received Report
- Accounts Payable Voucher
- Accounts Payable Register
- Stock Sheet—Raw Material
- General Ledger
- Cash Book
- Petty Cash Book
- Statement of Profit and Loss

Balance Sheet

(*b*) Related to factory operation
- Production Order
- Production Report—Cupola
- Bill of Material
- Material Requisition (for supplies and materials not covered by the Bill of Material)
- Time Reports
  - Pattern Shop
  - Molding Room
  - Other Departments
- Pay-Roll
- Production Report—Molders
- Production Report—General (other departments not separately stated)
- Defective Work Report
- Cost Sheet
- Stock Sheet (part finished and finished stock)
- Inventory Test Sheet
- Factory Ledger
- Statement of Factory Expenses (monthly)
- Analysis of Sales and Costs

Requirements:

1. Prepare chart of accounts and rulings for all forms including a brief statement of how each item is to be used.
2. If requirement (1) seems too heavy, the teacher may ask for only certain portions, as:
   - (*a*) Chart of operating accounts with explanation of each
   - (*b*) Form of Accounts Payable Voucher
   - (*c*) Production Report—Cupola
   - (*d*) Cost Sheet
   - (*e*) And so forth, as desired.

NOTE. The exact content of the Bill of Material cannot be prepared from the information given.

XVIII

MACHINE-SHOP[1]

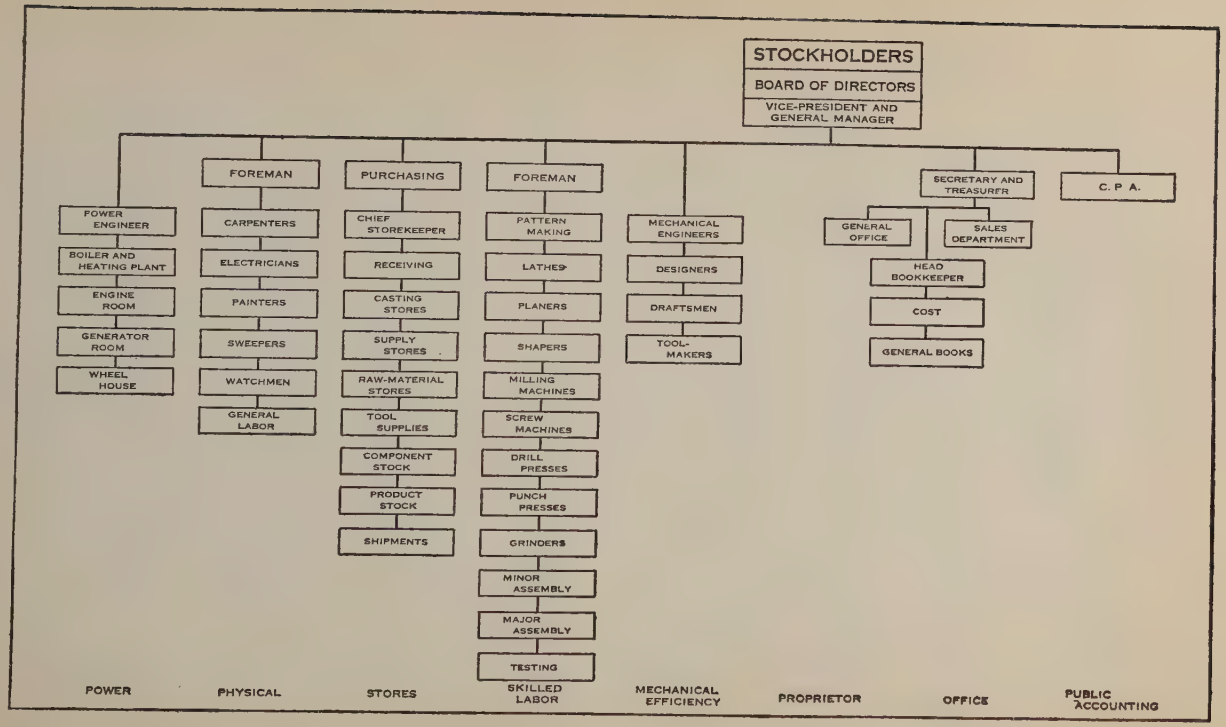
Preliminary survey. Organization chart. Classification of accounts and statements. Forms, books, and records. Production Order. Control of stores. Purchasing. Labor. Factory overhead. Depreciation. Assembling costs. Ledgers. Journals. Commercial operating expense.

The A. B. Company desired a complete cost system to be installed in its factory at Blank. The facts of the case, briefly stated, are given below.

The company manufactures centrifugal pumps run by engines or motors either directly or indirectly connected. The engines are manufactured, but the motors must be purchased outside. Production is carried on what is really a job-order basis, although standard pieces often are carried through in lots to be used as component stock or stock for repairs.

No perpetual inventory was maintained and everything concerning the amount of stock to be kept on hand was left to the discretion of the storekeepers and foremen. Physical inventory is taken once each year. There are two storehouses and a stock-room, each in charge of a keeper. Storehouse Number 1 holds all the casting stores upon which no work has been done. In one section, however, is a place for pump shells which have been machined and placed there to await final assembly. In another section is space for finished work which awaits shipping instructions. Storehouse Number 2 holds all raw materials other than castings and, also, it is the receiving room for all purchases. The stock-room occupies one portion of the shop proper and contains all kinds and sorts of bolts, setscrews, capscrews, gaskets, packing, and so forth, used in the assembly of the pumps and engines. This room also contains all the manufactured

[1]Review Chapter VI, *ante*, as far as Process Method.



Form 78: Organization Chart.

parts which have been placed in stock. In addition there is a small-tools room and a jig and template room, each watched over by a keeper.

Raw material and supplies were obtained by sending requisitions to the castings clerk or to the purchasing agent. These requisitions came from the storekeepers, the foremen, or the heads of the different departments. The purchasing agent was required to make certain no duplicate orders were received by him.

To draw raw material from stores, the foreman merely requested the storekeeper to send the required amount to such and such a workman. This individual, on starting a piece of work, filled out a card which was punched at the foreman's office. This card showed the workman's name and number, date, time started, time finished, name of article, number of pieces, operation, and order number. A summary of these cards gave the amount of direct labor expended.

Power is of three kinds: electricity, steam, and water. Water power, while the cheapest, is not dependable; hence, it is not used as much as electricity, the latter furnishing most of the power. In case of an emergency, steam can be used. This steam is obtained from a common heating and power plant.

The selling is handled by salesmen on the road and by agents in different cities. The salesmen receive both commission and salaries; the agents receive commission only. Many orders are received direct at the main office for repair parts, while a few are received for complete jobs.

ORGANIZATION CHART[1]

The first step contemplated the preparation of an Organization Chart. The one finally recommended is submitted as Form 78.

[1]Does this chart agree fundamentally with those of Chapter IX, *ante?* Why?

CLASSIFICATION OF ACCOUNTS

The second step in designing the system suggested contemplated the preparation of a Chart of Accounts and, as a necessary outgrowth thereof, the following statements:

Balance Sheet;
Profit and Loss Statement;
Statement of Cost of Manufacture and Cost of Manufactured Product Sold.

Inasmuch as no particular difficulty can be experienced in comprehending the General Ledger accounts, since the accounts with the factory were placed in a separate Factory Ledger, only the portion of the code related to the factory is submitted:

FACTORY LEDGER ACCOUNTS[1]

STORES INVENTORIES
Supply Group
11. Factory Supplies
12. Boiler Plant Fuel
13. Small Tool Stores
Material Group
21. Casting Stores
22. Raw Material Stores

NON-PRODUCTIVE DEPARTMENTAL BURDEN
31. Administrative Department
.01 Factory Administrative Department
32. Office Department
.01 Pay-Roll and Paymaster's Department
.02 Timekeeping Department
.03 Cost Department
.04 Shipping Department
33. Stores Department
.01 Purchasing Department
.02 Receiving Department
.03 Casting Stores Department
.04 Raw Material Department

[1]Review Chapter X, *ante*—Symbolization.

CONTROLLABLE S. O. EXPENSE SHEET

LABOR AND SUPPLIES TO BE CHARGED TO

LABOR AND SUPPLIES TO BE CHARGED TO	KEY NUMBERS	ADMINISTRATIVE DEPARTMENT	OFFICE DEPARTMENT	STORES DEPARTMENT	POWER DEPARTMENT	GENERAL DEPARTMENT	ELECTRICIANS' DEPARTMENT	CARPENTERS' DEPARTMENT	PAINTERS' DEPARTMENT	DESIGNING DEPARTMENT	DRAFTING DEPARTMENT	TOOLMAKING DEPARTMENT	PATTERN-MAKING DEPARTMENT	LATHE DEPARTMENT	PLANER DEPARTMENT	SHAPER DEPARTMENT	MILLING DEPARTMENT	SCREW-MACHINE DEPARTMENT	DRILL DEPARTMENT	PUNCH PRESS DEPARTMENT	GRINDING DEPARTMENT	ASSEMBLING DEPARTMENT	TESTING DEPARTMENT
		100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200
Repairs to Buildings (L)	1	101	201	301	401	501	601	701	801	901	1001	1101	1201	1301	1401	1501	1601	1701	1801	1901	2001	2101	2201
" " " (M)	2	102	202	302	402	502	602	702	802	902	1002	1102	1202	1302	1402	1502	1602	1702	1802	1902	2002	2102	2202
" " Machinery (L)	3				403	503	603	703	803	903	1003	1103	1203	1303	1403	1503	1603	1703	1803	1903	2003	2103	2203
" " " (M)	4				404	504	604	704	804	904	1004	1104	1204	1304	1404	1504	1604	1704	1804	1904	2004	2104	2204
" " Furn. & Fix (L)	5	105	205	305	405	505																	
" " " (M)	6	106	206	306	406	506																	
Replacement of Pattern or Drawings (L)	7									907	1007	1107	1207										
" " " " (M)	8									908	1008	1108	1208										
Spoiled Work Expense (L)	9													1309	1409	1509	1609	1709	1809	1909	2009	2109	2209
" " " (M)	10													1310	1410	1510	1610	1710	1810	1910	2010	2110	2210
Sweepers (L)	11	111	211	311	411	511	611	711	811	911	1011	1111	1211	1311	1411	1511	1611	1711	1811	1911	2011	2111	2211
Watchmen (L)	12	112	212	312	412	512	612	712	812	912	1012	1112	1212	1312	1412	1512	1612	1712	1812	1912	2012	2112	2212
Truckers and Crane Men (L)	13				413	513								1313	1413	1513	1613	1713	1813	1913	2013	2113	2213
Power Plant Labor (L)	14				414																		
General Factory Help (L)	15													1315	1415	1515	1615	1715	1815	1915	2015	2115	2215
" " Supplies	16													1316	1416	1516	1616	1716	1816	1916	2016	2116	2216
Office Supplies	17	117	217	317		517																	
Traveling Expense	18					518																	
Overtime Allowance (L)	19		219	319	419	519	619	719	819	919	1019	1119	1219	1319	1419	1519	1619	1719	1819	1919	2019	2119	2219
Small Tool Expense	20				420	520	620	620	820			1120	1220	1320	1420	1520	1620	1720	1820	1920	2020	2120	2220
Inventory Adjustments	21																						
Clerks	22	122	222	322		522																	
Shop Office Expense	23	123	223			523																	
Boiler and Heating Plant Expense	24				424																		
Engine Room Expense	25				425																		
Generated Electricity Expense	26				426																		
Transmitted Power Expense	27				427																		
Water Power Expense	28				428																		

.05 Tool Supply Department
.06 Component Stock Department
.07 Product Stock Department
.08 Supply Stores
34. Power Department
35. General Department

PRODUCTIVE DEPARTMENTAL BURDEN

Repairs and Betterments

51. Electricians' Department
52. Carpenters' Department
53. Painters' Department

Prerequisite Production

61. Designing Department
62. Drafting Department
63. Toolmakers' Department
64. Pattern Makers' Department

Component Production

Specific Section
71. Lathe Department
72. Planer Department
73. Shaper Department
74. Milling Department
75. Screw Machine Department
76. Drill Department
77. Punch Press Department
78. Grinding Department
Finished Section
91. Assembling Department
95. Testing Department

WORK IN PROGRESS

Repairs and Betterments

101. Repair Work in Progress
.01 Direct Labor
.02 Material
.03 Applied Burden
102. Betterment Work in Progress
.01 Direct Labor
.02 Material
.03 Applied Burden

Prerequisite Production

111. Drafting Work in Progress

EXHIBIT B.

THE A. B. COMPANY

STATEMENT OF PROFIT AND LOSS

FROM_____TO_____

GROSS SALES		XXXXX.—
LESS—ALLOWANCES ON SALES		XXX.—
NET SALES		XXXXX.—
LESS—COST OF GOODS SOLD (EXHIBIT C)		XXXXX.—
GROSS OPERATING PROFIT		XXXX.—
ADD—PROFIT ON SALE OF PURCHASED GOODS		XXX.—
		XXXX.—
LESS—LOST PROFIT ON RETURNED SALES		XXX.—
NET OPERATING INCOME		XXXX.—
LESS—COMMERCIAL OPERATING EXPENSES		
Selling Expenses (Distribution Book)	XXXX.—	
Administrative Expenses (Distribution Book)	XXXX.—	
Freight out on Goods Sold	XXX.—	
Loss on Customers Accounts and Notes	XX.—	
TOTAL COMMERCIAL OPERATING EXPENSES		XXXX.—
GROSS PROFIT		XXXX.—
ADD—OTHER INCOME		
Interest on Receivables and Bank Balances	XXX.—	
Stock Dividends	XXX.—	
Interest on Bonds	XXX.—	
Other Income	XX.—	
TOTAL OTHER INCOME		XXXX.—
GROSS INCOME		XXXXX.—
LESS—OTHER EXPENDITURES AND DEDUCTIONS		
Discount on Sales	XXXX.—	
Lost Discount on Purchases	XXX.—	
Expansion Land Expense	XX.—	
State Income Taxes	XX.—	
Federal Income Taxes	XX.—	
Miscellaneous Expenditures and Deductions	XX.—	
TOTAL OTHER EXPENDITURES AND DEDUCTIONS		XXXX.—
NET INCOME		XXXX.—

Form 80: Statement of Profit and Loss.

.01 Direct Labor
.02 Material
.03 Applied Burden

112. Tool Work in Progress

.01 Direct Labor

.02 Material
.03 Applied Burden
113. Pattern Work in Progress
.01 Direct Labor
.02 Material
.03 Applied Burden

Component Production

121. Parts Work in Progress
.01 Direct Labor
.02 Material
.03 Applied Burden
122. Assembly Work in Progress
.01 Direct Labor
.02 Material
.03 Applied Burden

STOCK INVENTORIES

131. Component Stock
132. Product Stock

SCRAP

141. Scrap

BALANCING ACCOUNT

151. General Ledger Balancing Account

The three statements mentioned above are submitted as Form Nos. 79, 80, and 81.

FORMS, BOOKS, AND RECORDS

These are explained briefly in the remaining portion of this chapter. The forms used in the system are summarized as under (exclusive of the statements referred to above):

Production Order-Job and Stock (each to be separate)
Material Sheet (Bill of Material)
Material Requisition
Bin Card
Stores Issued and Returned Report
Stores Ledger Card
Stores Returned Slip
Purchase Requisition
Purchase Order

EXHIBIT C.

THE A. B. COMPANY

COST OF GOODS MANUFACTURED AND SOLD

FROM_____TO_____

COST OF MANUFACTURE		
Material Consumed		XXXX.—
Direct Labor		XXXX.—
Factory Expenses		
Repairs to Buildings	XXX.—	
Repairs to Machinery	XXX.—	
Repairs to Furniture and Fixtures	XX.—	
Replacement of Patterns and Drawings	XXX.—	
Spoiled Work Expense	XX.—	
Sweepers	XXX.—	
Truckers and Crane Men	XXX.—	
Power Plant Labor	XXX.—	
General Factory Help	XXX.—	
General Factory Supplies	XX.—	
Office Supplies	XX.—	
Traveling Expenses	XX.—	
Overtime Allowance	XX.—	
Small Tools Expense	XX.—	
Inventory Adjustments	XXX.—	
Clerks	XX.—	
Shop Office Expense	XX.—	
Boiler and Heating Plant Expense	XXX.—	
Engine Room Expense	XXX.—	
Generated Electricity Expense	XXX.—	
Transmitted Power Expense	XXX.—	
Water Power Expense	XX.—	
Depreciation of Factory Buildings	XXX.—	
Depreciation of Machinery and Equipment	XXX.—	
Depreciation of Patterns and Drawings	XXX.—	
Patents Expired Value	XX.—	
Salaries	XXX.—	
Freight and Express in	XX.—	
Fire Protection Expense	XXX.—	
Taxes	XXX.—	
Insurance	XXX.—	
Employers Liability	XXX.—	
Water	XXX.—	
Gas and Electricity	XXX.—	
Superintendent and Foreman	XXX.—	
TOTAL FACTORY EXPENSES		XXXX.—
		XXXXX.—
TOTAL MATERIALS, DIRECT LABOR, AND FACTORY EXPENSES		
Less—Sales of Scrap	XXX.—	
Work in Process at end of period	XXXX.—	XXXX.—
		XXXXX.—
Add—Work in Process at beginning		XXXX.—
		XXXXX.—
COST OF GOODS MANUFACTURED		
Add—Finished Goods at beginning		XXXX.—
		XXXXX.—
Less—Finished Goods at end		XXXX.—
COST OF SALES (SEE EXHIBIT B)		XXXXX.—

Form 81: Statement of Cost of Goods Manufactured and Sold.

- Purchase Order Register
- Receiving Report
- Job Card (Labor Ticket)
- Standing Order Labor (Time) Ticket
- Clock Card for Labor Time
- Pay-roll
- Controllable Overhead Standing Order Sheet
- Non-controllable Overhead Standing Order Sheet
- Overhead Distribution Sheet
- Depreciation Schedule
- Production Order Cost Sheet
- General Ledger
- Customers' Ledger
- Creditors' Ledger
- General Journal
- Journal Voucher
- Purchase Register
- Voucher Jacket
- Sales Register
- Sales Invoice
- Check Register
- Cash Receipts Register
- Petty Cash Voucher
- Petty Cash Book
- Selling Expense Distribution Sheet
- Administrative Expense Distribution Sheet

PRODUCTION ORDER

This order comes from the general manager's office and is issued in three copies. Copy Number 1 goes to the Shop Foreman and is an order for him to begin work on the job according to the information furnished him. Copy Number 2 travels to the accounting department and is a notice that a Cost Sheet should be made ready to get the cost of the complete job. The third copy is retained in the office and is filed with all the other literature relating to the order. Sometimes in case of special work a fourth copy is made and sent to the pattern department. This is an order to them to start work on the special pattern rendered necessary.

The Production Order may relate specifically to one com-

RECEIVED_____ ORDER NUMBER _____ SHIPPED_____

DESCRIPTION OF JOB_____

BLUE PRINTS_____

NAME OF PIECE	NO. PIECES	IN STOCK	CAST	REMARKS
Suction Side				
Pulley Side				
Solid Shell				
Suction Disc				
Pulley Disc				
Suction Pipe				
Discharge Swivel				
Y Pipe				
Runner				
Hub				
" Brass				
" Gland				
Frame				
Stand				
" Cap				
" Bushing				
Pillow Block				
" " Cap				
Pulley				
Collar				
Thrust Bearing Stand				
" " Plate				
" " Collar				
" " Ring				
Suction Elbow				
" " h. h. Plate				
" " b. z. Bush				
" " c. i. Bush				
" " Cap				
Discharge Elbow				
Suction Flange				
Discharge Flange				
Ejector Flange				
Coupling				
Separating Piece				
" " Bush				
Intermediate Section				
Vertical Bearing				NOTE:—All engine parts should be listed on another
" " Cap				form similar to this.
Shaft Sleeve				
" Nut				

Form 82: Material Sheet.

plete job, or it may be a Stock Production Order. Often in a complete job there are so many parts and so many operations on a part that Sub-Production Orders are issued in order to maintain better control. In many instances in standard work from 6 to 25 or even 50 pieces will be carried along on these Sub-Production Orders, so as to cut down the overhead per piece. All the pieces not ordered on their completion as finished parts are to be transferred to the stock-room as component stock and stock for repairs. In special work, however, only the required number of pieces are to be carried.

CONTROL OF STORES[1]

The foreman on receiving the Production Order refers to the blue-print number on the order and if it is standard makes out his list of materials needed by checking the pieces on a Material Sheet (Form 82). If it is a special order, the Production Order is so marked and the foreman awaits special blue-prints from the designing and drafting departments. When these prints arrive, they carry the Material Sheet properly marked.

He is now ready to obtain the material, the first step of which is making out Material Requisition Slips. These requisitions may be signed by either the engineering department or the different foremen. When he withdraws the stores, the keeper makes an entry on his Bin Cards and Stores Issued and Returned Report, signs the requisition, and forwards it to the accounting department, where it is extended and an entry made in the Stores Ledger. An entry is also made on a Production Order sheet and then the requisition is filed away. The requisition must be made out in duplicate before any stores or supplies may be withdrawn for any purpose.

As mentioned above, the Bin Card is the storekeeper's means of controlling material, by recording each issue on the

[1]Compare this method of control with that of Chapter XVI, *ante*.

proper card at the time it is made. If the clerical work is correct, the card should agree with the amount of goods in the bins or on the floors, and with the Stores Ledger. In case of a fair difference between the three, an investigation is started and an adjustment made.

At the time of an issue, an entry is made on a Stores Issued and Returned Report. At the end of the day, this sheet is sent to the accounting department, the prices extended, totaled, and the amount transferred to a new sheet which is totaled monthly. This monthly total represents the material which has been put in process or consumed through expense orders.

The Stores Ledger, which is kept in the accounting department, consists of cards. When goods are ordered, an entry is made on the Stores Ledger card giving full information. After the order is received, the quantity and cost are entered in the On Hand column. Balances are to be computed after each withdrawal and, therefore, a perpetual inventory is maintained over all stores and stock, as a total can be readily ascertained by running the balances on the adding machine. The accounting department is also enabled to keep a check on the maximum and minimum stores and an estimate on the turnover of the stock.

Often it is necessary to return stores to the shelves, in which case a Stores Returned Slip is made out in duplicate by the foreman. One copy is sent direct to the accounting department; the other goes with the goods to the storehouse. This slip follows the same course as the Requisition with the exception that the entries are a credit, thus reducing the amount of the stores which have been withdrawn for the job.

PURCHASING[1]

Whenever anything is needed which is not on hand or the ordering point of the different materials and supplies has been reached, a Purchase Requisition is prepared. Dupli-

[1]Compare procedure with that of Chapter XV, *ante*.

cate copies are made—one going to the purchasing department, the other remaining with the originator. The Purchase Requisition may be made out by any department head or foreman but must be checked by a storekeeper. In the office, the requisition, after being checked and specifications noted on it, is filed with a copy of the Purchase Order to await the arrival of the invoice.

The Purchase Order is made out by the purchasing agent after he has determined where he can buy most advantageously. The orders are numbered serially and carry a notation that all invoices and packages should bear that number. The original is white, the first duplicate buff colored, the second pink. The first copy is sent to the vendor, the second is sent to the accounting department and thence to the storekeeper as a notice that the goods have been ordered, and the third copy is retained in the office. The Purchase Order number is placed on the Purchase Requisition and the number of the requisition placed on the Purchase Order, an entry made in the Purchase Order Register, and then both are filed among the unfilled requisitions to await the invoice and the receiving clerk's report, after which the forms are filed permanently.

On the arrival of a shipment of goods, the receiving clerk makes three copies of a Receiving Report, one going to the purchasing agent, one going with the goods to the storekeeper, and the third remaining in the receiving department. Copy Number 1 is compared with the invoice in the office, the prices are extended and the copy is forwarded to the accounting office. Copy Number 2 is the basis for the entry on the Bin Cards and after being signed is sent to the accounting department, where it is compared with Copy Number 1. Entry is then made on the Stores Ledger and on the general books. The invoice is sent to the accounting department for entry and information and then forwarded to the general office for payment. As discounts should be taken advantage of, a careful check must be kept over all invoices.

LABOR[1]

Direct labor on orders is computed from Job Cards, which are stamped and given to the workman as he starts a piece of work. When his work on certain specified material is completed, he is given a new card. If the work is not finished at the end of the day, the card is collected, a new one

STANDING ORDER TIME-TICKET

NAME _____ WEEK ENDING _____

CHECK NUMBER _____ WAGE RATE _____

CHARGE TO STANDING ORDER NO	KIND OF WORK	DEPT WHERE EMPLOYED	HOURS						TOTAL HOURS	TOTAL WAGES	
			MON	TUES.	WED	THUR.	FRI	SAT.			

Form 83: Standing Order Time-Ticket.

made out for the next day and the old one sent to the cost clerk. Thus all direct labor may be entered daily on the Cost Sheets.

All labor not engaged productively charge their time to Standing Orders by means of Standing Order Time-Tickets —Form 83. The ticket is filled out by a shop clerk or a foreman to whom the men report on changing jobs. In this way it is a simple matter at the end of the week to classify the indirect labor. At the end of the month it is entered on the Distribution Sheet and apportioned. All labor on entering the factory must punch a time clock. This time-ticket is compared daily with the Job Cards and

[1]Compare treatment with that shown in Chapter XVI, *ante*.

CONTROLLABLE S. O. EXPENSE SHEET

LABOR AND SUPPLIES TO BE CHARGED TO

	KEY NUMBERS	ADMINISTRATIVE DEPARTMENT	OFFICE DEPARTMENT	STORES DEPARTMENT	POWER DEPARTMENT	GENERAL DEPARTMENT	ELECTRICIANS' DEPARTMENT	CARPENTERS' DEPARTMENT	PAINTERS' DEPARTMENT	DESIGNING DEPARTMENT	DRAFTING DEPARTMENT	TOOLMAKING DEPARTMENT	PATTERN-MAKING DEPARTMENT	LATHE DEPARTMENT	PLANER DEPARTMENT	SHAPER DEPARTMENT	MILLING DEPARTMENT	SCREW-MACHINE DEPARTMENT	DRILL DEPARTMENT	PUNCH PRESS DEPARTMENT	GRINDING DEPARTMENT	ASSEMBLING DEPARTMENT	TESTING DEPARTMENT
		100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200
Repairs to Buildings (L)	1	101	201	301	401	501	601	701	801	901	1001	1101	1201	1301	1401	1501	1601	1701	1801	1901	2001	2101	2201
" " " (M)	2	102	202	302	402	502	602	702	802	902	1002	1102	1202	1302	1402	1502	1602	1702	1802	1902	2002	2102	2202
" " Machinery (L)	3				403	503	603	703	803	903	1003	1103	1203	1303	1403	1503	1603	1703	1803	1903	2003	2103	2203
" " " (M)	4				404	504	604	704	804	904	1004	1104	1204	1304	1404	1504	1604	1704	1804	1904	2004	2104	2204
" " Furn. + Fix (L)	5	105	205	305	405	505																	
" " " (M)	6	106	206	306	406	506																	
Replacement of Pattern or Drawings (L)	7									907	1007	1107	1207										
" " " " (M)	8									908	1008	1108	1208										
Spoiled Work Expense (L)	9													1309	1409	1509	1609	1709	1809	1909	2009	2109	2209
" " " (M)	10													1310	1410	1510	1610	1710	1810	1910	2010	2110	2210
Sweepers (L)	11	111	211	311	411	511	611	711	811	911	1011	1111	1211	1311	1411	1511	1611	1711	1811	1911	2011	2111	2211
Watchmen (L)	12	112	212	312	412	512	612	712	812	912	1012	1112	1212	1312	1412	1512	1612	1712	1812	1912	2012	2112	2212
Truckers and Crane Men (L)	13				413	513								1313	1413	1513	1613	1713	1813	1913	2013	2113	2213
Power Plant Labor (L)	14				414																		
General Factory Help (L)	15													1315	1415	1515	1615	1715	1815	1915	2015	2115	2215
" " Supplies	16													1316	1416	1516	1616	1716	1816	1916	2016	2116	2216
Office Supplies	17	117	217	317		517																	
Traveling Expense	18					518																	
Overtime Allowance (L)	19		219	319	419	519	619	719	819	919	1019	1119	1219	1319	1419	1519	1619	1719	1819	1919	2019	2119	2219
Small Tool Expense	20				420	520	620	620	820			1120	1220	1320	1420	1520	1620	1720	1820	1920	2020	2120	2220
Inventory Adjustments	21																						
Clerks	22	122	222	322		522																	
Shop Office Expense	23	123	223			523																	
Boiler and Heating Plant Expense	24				424																		
Engine Room Expense	25				425																		
Generated Electricity Expense	26				426																		
Transmitted Power Expense	27				427																		
Water Power Expense	28				428																		

Standing Order Time-Tickets to see if there is any difference in time. The pay-roll is prepared from the clock cards.

FACTORY OVERHEAD[1]

Factory Overhead is of two kinds—controllable and non-controllable. The controllable items are segregated on a Controllable Standing Order Expense Sheet—Form 84—and given key numbers, each item on the list being assigned a consecutive number. The departments have been listed horizontally at the top of the sheet, they having been allotted key numbers. Thus, when material is required for non-productive work, the requisition is numbered with the key number—that is, if supplies are needed for the lathe department, the requisition would bear the number 1316.

The fixed charges are listed on a Non-Controllable Standing Order Expense Sheet—Form 85. The annual charge is entered on this sheet and then the amount of each applicable to the period is determined and distributed equitably over the departments.

In this manner control is secured over all the expense charges and all that remains is to gather these charges together and distribute them. This is easiest done by means of an Expense Distribution Sheet—Form 86. All the expenses are summarized here and the non-productive departmental expenses are spread over the productive departments. The total departmental burden now may be distributed over production.

DEPRECIATION

Depreciation is figured according to a predetermined rate. This is accomplished by means of a Depreciation Schedule—Form 87. By listing full information concerning each depreciable asset, the schedule also takes the form of an inventory sheet. After determining the amount to be depreciated and the rate, the schedule is drawn up to work

[1]Compare treatment with Chapter XIII, *ante*—Expense Distribution.

NON-CONTROLLABLE S. O. EXPENSE SCHEDULE

Charge		Non-Controllable Charges	Basis of Distribution	Plant Value																								
				Square Feet																								
				No. Employed																								
Current	Annual			Unit Rate	Admin Dept	Office Dept	Stores Dept	Power Dept	General Dept	Electricians	Carpenters	Painters	Designing	Drafting	Tool Makers	Pattern Makers	Lathe	Planer	Shaper	Hand & Screw Mch	Drill	Punch Press	Grinding	Assembling	Testing			
		Dept of Factory Building	Sq. Ft. of Floor Space																									
		Dept of Mch + Equipment	No. of Machines																									
		Dept of Patterns + Drawings	Estimated																									
		Patents Expired Value	"																									
		Salaries	No. of Men																									
		Freight + Express in	Estimated																									
		Fire Protection Exp.	"																									
		Taxes	Assessed Valuation																									
		Insurance	" "																									
		Employers Liability	No. of Employees																									
		Water	Estimated																									
		Gas	"																									
		Electricity	"																									
		Supt and Foremen	No. of Men																									

Form 85: Non-Controllable Standing Order Expense Sheet.

out the monthly charges and the individual charges to departments. From the schedule, the charges are transferred to the Non-Controllable Standing Order Sheet and thence to the Overhead Distribution Sheet.

ASSEMBLING COSTS

Production Order Cost Sheets—Form 88—are used to collect the cost of subproduction orders, stock orders, and betterment orders, as well as on the complete and specific production order. The different costs come to the office through the direct-labor time-tickets and the individual material requisitions. The overhead is distributed according to a predetermined ratio based on both labor and material. Both are used because some jobs are assembled on which the material bill is large but the labor is practically nothing—that is, sand pumps. On the other hand, in the erection and machining of stage pumps little material is used but the machine work is heavy and complicated and the floor work slow because of the great need of accuracy. As the jobs are completed, the costs are distributed to their proper accounts.

LEDGERS

Three general office Ledgers are utilized: General, Customers', and Creditors'. The Ledger rulings are standard. In the factory, there are: Factory Ledger, Stores Ledger, Cost Ledger.

JOURNALS

Entries not pertaining to cash, sales, and purchases are entered in a General Journal, this being merely a regular six-column form providing for controlling entries related to customers' and creditors' accounts.

All purchases are recorded in a Purchase Book or Register. Cash purchases are entered herein, are checked, and the payment of cash posted from the Check Register. The

DEPRECIATION SCHEDULE FOR PERMANENT ASSETS

DATE	VENDOR	DESCRIPTION	COST	% DEPRECIATION	AMOUNT DEPRECIATION	DISTRIBUTION																												
						OFFICE		NON-PRODUCTIVE DEPARTMENTS					PRODUCTIVE DEPARTMENTS																						
						SELLING	ADMINISTRATIVE	ADMINISTRATIVE	OFFICE	STORES	POWER	GENERAL	ELECTRICIANS	CARPENTERS	PAINTERS	DESIGNING	DRAFTING	TOOL-MAKING	PATTERN MAKING	LATHE	PLANER	SHAPER	MILLING	SCREW MACHINE	DRILL	PUNCH PRESS	GRINDING	ASSEMBLING	TESTING						

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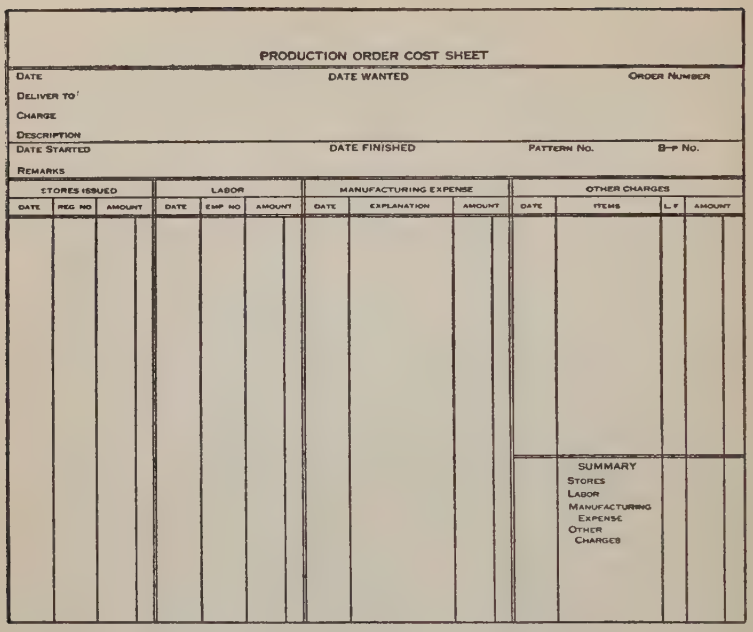


PRODUCTION ORDER COST SHEET

DATE — DATE WANTED — ORDER NUMBER

DELIVER TO

CHARGE

DESCRIPTION

DATE STARTED — DATE FINISHED — PATTERN No. — B-P No.

REMARKS

STORES ISSUED			LABOR			MANUFACTURING EXPENSE			OTHER CHARGES			
DATE	REQ NO	AMOUNT	DATE	EMP NO	AMOUNT	DATE	EXPLANATION	AMOUNT	DATE	ITEMS	L F	AMOUNT
										SUMMARY		
										STORES		
										LABOR		
										MANUFACTURING EXPENSE		
										OTHER CHARGES		

Form 88: Production Order Cost Sheet.

totals of most columns are posted monthly. The selling and administrative expenses are posted in detail to underlying distribution sheets.

All sales are entered in a Sales Book, which is posted monthly. Cash sales are entered herein, checked and the cash received therefor accounted for through the Cash Receipts Register.

The treasurer of the company signs the checks, after which these are entered in a Check Register which is posted monthly.

All cash receipts are accounted for through a Cash Receipts Register. All cash is deposited intact; hence, entry in this book is equivalent to entry in a bank account.

A petty cash fund is kept on the imprest basis. For each petty payment, a voucher is made out, approved, and presented to the petty cashier. These vouchers are distributed

in a Petty Cash Book, and postings to the Ledger accounts involved occur from this record.

COMMERCIAL OPERATING EXPENSES

The major portion of commercial operating expenses consists of selling and administrative expenses, which are collected on Distribution Sheets—Forms 89a and 89b. Instead of having an individual Ledger account for each item of such expense, it is much more satisfactory to use these sheets, enter the cost directly on them, total them monthly and transfer the total to the Ledger.

Problems

(*a*) Based upon a comparative study of the chart of accounts and the statements submitted in this chapter, prepare a report offering constructive criticism whereby both system units will dovetail to advantage more than at present. If you have any criticism to offer as to the technical construction of the statements, other than their tieup with the classification of accounts, include your findings hereon.

As a second portion of this report, comment favorably or unfavorably (as the case may be) upon the rulings of the forms submitted and, if necessary, indicate wherein the system would be benefited by the inclusion of forms other than those used, or by the exclusion of certain of those now in operation.

(*b*) A newly incorporated company purchases the patent right of a new rotary grate and proceeds to place the same on the market, by putting in the field some first-class salesmen. Not only is it their intention to erect this device, but they purchase a plant consisting of foundry, machine-shop, blacksmith shop, carpenter shop, and assembly room, so that they will be in a position to manufacture all of the parts. As they intend to sell only six sizes, they will be able to manufacture for stock, the parts thus put into stock being taken out on requisition for the purpose of filling contracts, or to replace old parts. Their terms will be one-half cash on delivery of all parts of the mechanism at the plant and the balance to be paid in one month after operation. Their agreement with their salesmen is based on a fixed salary, together with a commission of 5% on the cash collected on contracts secured.

DISTRIBUTION BOOK — SELLING EXPENSE

1 ELECTRIC LIGHTING	2 BOILER AND HEATING PLANT EXPENSES	3 AUTO SERVICE	4 ADVERTISING	5 PRINTING AND STATIONERY	6 OFFICE SALARIES	7 TRAVELING EXPENSES	8 SELLING AGENCY EXPENSES	9 SALESMEN'S SALARIES	10 SALESMEN'S COMMISSIONS	11 SALESMEN'S EXPENSES	12 FREIGHT AND CARTAGE OUT	13 FREIGHT ON RETURNED SALES	14

Form 89a: Distribution Sheet—Selling Expense.

DISTRIBUTION BOOK — ADMINISTRATIVE EXPENSE

51 ELECTRIC LIGHTING	52 BOILER AND HEATING PLANT EXPENSES	53 OFFICE SALARIES	54 STATIONERY AND PRINTING	55 OFFICERS SALARIES	56 POSTAGE	57 TELEPHONE AND TELEGRAPH	58 DEP ON OFFICE FUR AND FIXTURES	59 LOSS ON CUST ACC'S AND NOTES	60 GENERAL OFFICE EXPENSES	61	62	63	64

Form 89b: Distribution Sheet—Administrative Expense.

State what books of account they should keep, and their form. Describe all the Factory Ledger accounts which you would deem it necessary that they should open, with reasons therefor. Draw up an intelligent and comprehensive form of monthly statement to be rendered to the directors of the company. Prepare your findings in the form of a report.

(*c*) A printing and publishing house has the following departments: Bindery and Composing Room, Store, Subscription Sales, Periodicals, General Office.

The general office personnel consists of general officers, bookkeepers and clerks. The office is responsible for the general conduct of the business, and for the maintenance of the buildings. It handles the selling end of the business, negotiates loans and pays taxes.

The bindery department is conducted as a manufacturing business. It does work for outside customers and for the store department. It purchases its own materials, other than white paper, pays its own wages, maintains its own equipment, and delivers its own goods.

The store purchases white paper for the bindery, and buys books from the bindery and from outside publishers. It sells paper and books to other departments, and books to customers. It operates a selling and advertising organization and shipping and delivery departments.

The subscription sales department conducts a subscription sales business, purchasing books from the store and from outside publishers, employs a force of salesmen, places advertising, and sends out advertising matter.

The periodical department publishes and sells two magazines. It receives subscriptions and advertising, purchases manuscript, operates an editorial department, conducts its own advertising, and meets its bills for paper, printing, and binding.

In all departments there are certain incidental expenses which are not properly chargeable to any one particular department.

Based upon the above, devise a system of accounts for this business in complete form.

(*d*) The Acme Repair Works is engaged in the welding of metals. Customers bring in the jobs, consisting of broken metal parts; after a few days, they receive the parts back welded together. The company makes an absolute guaranty that, if the weld does not hold, the work will be done over free of all charges; however, the customer must prove the weld was done in this shop in the first instance.

The owner of this shop engages you to develop a means of

determining the cost of each job and to recommend and rule to scale the forms needed therefor. After careful investigation, you make note of the following points to guide you in the work of ruling these forms:

1. The shop is not large, employing at the most at any one time not in excess of 10 repair men.

2. The customer is to be given an identification tag or slip containing the job number assigned to the work he has brought in.

3. Provision must be made to identify the job, at any time, in its progress through the shop.

4. A cast sheet covering every job is to be retained in the office and from the amount thereon recorded the book entries are made.

5. A production order is prepared in the office, after which it is sent out to the shop foreman. Provision is to be made on this order for accumulating the direct material and labor costs. By this means the production order becomes both a material requisition and a time sheet.

6. When the work is completed on any job, the article in question is placed with the other completed jobs. The job ticket (the completed order form) is then sent to the office for entry upon the cost sheet; and further amounts are included on the latter for overhead and profits. The total amount now represents the sales price of the job.

7. Upon the completion of each cost sheet, the customer's bill is made out therefrom.

Requirements:

(1) All forms called for, ruled to scale;
(2) Description of the operation of the system.

XIX

KNIT GOODS

Hosiery. Knit underwear. System of accounting. Chart of accounts and general records. Materials and supplies. Labor. Non-controllable expenses. Expense apportionment. Departmental cost contact. Monthly statements.

KNIT goods, with regard to cost determination, may be separated into three fundamental types or classes:

1. *Hosiery*—seamless and full-fashioned with seams;
2. *Ribbed goods*—sweaters, jackets, tops for hose, and tops for sleeves and legs of certain garments;
3. *Flat goods*—ordinary underwear.

In a particular mill, the cost of each grade of product fabricated must be determined. In the case of hosiery, for example, the grades may be established in conformity with the retail price per pair, although it must be recognized that a particular grade thus established may be differentiated further into a number of varieties dependent upon the fineness or weight of the yarn.

HOSIERY

The knitting process consists of having a series of needles —latch or spring hook—pick up the yarn in such a manner that continuous loops are made, the needles holding the yarn then releasing it, and so on in a continuous performance. Cotton hosiery, for example, is either seamless or full-fashioned. Seamless hosiery is knit on circular frames, the thread moving in a circle, being caught and looped, loop into loop, until the leg form has been completed. The material then goes onto a looping machine for the purpose of closing the toe. Next, a differentiation is in order, dependent upon

whether the run is women's hosiery or men's hose; in the first instance, a welding machine hems the top, whereas in the latter case the top is knit so as to secure a ribbed result.

The knitting of full-fashioned hosiery first occurs on a frame somewhat long and flat, a number of stockings being made at one time; this is the "legging" process. Next, the material passes to the "topping" process, this comprehending the placing of the legs on a toothed bar that resembles a comb. The bar is put on a footer machine which knits the foot onto the leg of the stocking. Following this, the toe and heel are closed up on a looping machine, after which the leg and foot are sent through a sewing machine in order to be seamed. Next, the stockings are repaired.

The process next in order is dyeing, this being done at times on the outside as where the mill does not operate its own dye-house. When the hosiery has passed through the dyeing process, it is again turned and sorted, after which it is mounted on flat boards which are leg-shaped, placed between sheets of heavy cardboard and set in a hydraulic press. Subsequently, the hosiery is repaired, and again mended if found necessary. Then it is stamped and ticketed, boxed and cased, after which it is ready for shipment.

In setting up a cost specification for a particular kind of stocking, considerable care must be given to the yarn designation—gage, weight, number, and so forth; it is customary to indicate the number of needles to be used in the knitting, these being equal to the number of loops in the stocking circumference. Gage, as here used, ordinarily refers to the number of leads in a three-inch space; each lead contains two needles. The labor cost as estimated probably will be fairly accurate inasmuch as a considerable portion of the work is done on a piece basis; although the paying basis is not entirely uniform in all mills, it might happen that in the fabrication of seamless hosiery the processes of examining, dyeing, pressing, pairing, ticketing, and boxing will be paid for at day-rates. Piece-rate labor cost is readily estimated;

hence, it is only necessary to exercise great caution in estimating the cost of day-work operations.

KNIT UNDERWEAR

Knit goods in the underwear line may be divided into the following basic classes:

Men's:
- Balbriggan (flat)
- Ribbed
- Fleece-lined

Women's:
- Ribbed

Usually, only one kind is manufactured in a particular mill. The same general plan seems to be available in securing costs hereunder as is found in the case of hosiery.

Underwear may be made on circular knitting machines which knit the material into a long tube, these tubes being cut up later and worked into the finished garments. The goods are cut into lengths as desired, after which the garment sections per patterns are cut. Then looping machines join together the edges of the cut pieces—cuffs to sleeves, tails to shirts—and close the shoulders. Subsequently, the sleeves are sewed up and attached to the body of the garment. Prior to washing, bleaching, rinsing, boarding, and drying, the articles are mended if necessary. After having been dried to the desired sizes, the garments are sorted and size-stamped. The necks and fronts are finished, buttonholes made and buttons sewed on, and then an inspection is made; finally, they are boxed, labeled, and stored for shipment.

SYSTEM OF ACCOUNTING

It is the purpose next to present some of the fundamental principles underlying the operation of a system of accounts for a mill which manufactures knit underwear. The material offered is based upon a system encountered in one mill

of modest size, believed to be representative of a certain class of mills scattered throughout the country.

In the mill under discussion, cloth is knitted from yarn purchased on copps or cones; hence, the operation work commences with that of knitting and winding. Some of the larger concerns purchase the cotton in the raw state and process it to the finished goods. If the yarn is bought on cones, usually it is knit into cloth from the cones; again, it may first be rewound onto bobbins so as to eliminate imperfections in the yarn. If desired, the two operations of winding and knitting may be separated and costs determined for each.

After the yarn has been knit into rolls, the next process in order of sequence is that of bleaching. From the bleaching room, the cloth is transferred to a knapping room, thence to the cutting room, and finally to the finishing room. The completed garments then are folded and packed to await shipment.

Upon the basis of the above, recognizing the fact that certain variations will be encountered in particular cases, the following departmental divisions were encountered:

Stores
Knitting and Winding
Bleaching and Knapping
Cutting
Finishing
Folding
Packing
Shipping
Power
Office
Machine-Shop
Box-Shop
General Factory

Some of these are productive in nature, whereas others are non-productive.

In the short space of one chapter it is impossible to present a satisfactory analysis of all the general mysteries of

cost accounting as applied to the detached life of one particular knitting mill. As is true in other lines of endeavor, every mill is a problem in itself. It has its own peculiarities and its particular personnel, both of which must be studied carefully before even the slightest constructive contact upon the system proper is attempted.

Apparently, but few knitting mills today are in position to know their exact condition between two inventory dates—both from a financial point of view and from the standpoint of operation.

CHART OF ACCOUNTS AND GENERAL RECORDS

The only accounts of importance to which the attention need be drawn are the following:

Material accounts
- Yarn
- Trimmings
- And so forth

Expense accounts
- Manufacturing
- Administrative
- Selling

In many knitting mills, as in this one, the use of a so-called Charge Register is fairly common. All invoices received are checked as to prices and extensions and entered under the proper accounts related to material and expense. Labor and other items are passed through this Register. A description of each expenditure is shown, the entries being found under either Factory or other various expenses, and also under the particular departments charged therefor. At the end of each month, entries are in order by means of which these various columns are charged with the determined-upon overhead. Then the postings are made.

Next, a detailed recapitulation is taken of the expenses from which postings or transfers are made to Expense Analysis Sheet. Direct Labor is chargeable to a sheet of this

character. Since all of these items are posted from the Charge Register to the General Ledger, all totals on the Analysis Sheet or Sheets must check out.

The Voucher Check is used. This shows the gross amount of the invoice, discount and allowances, net amount, and date of invoice. The check is prepared with a carbon sheet which gives an exact duplicate of the one sent to the creditor. As the invoices fall due after being posted to the Charge Register and filed, a Voucher Check is prepared, the original going to the creditor and the duplicate being filed. As each check is made out, the date of payment is placed in the Charge Register opposite the invoice concerned.

At the end of each day, the carbon sheets of the Voucher Checks are totaled and entered in total in the Cash Book. Monthly totals from the Cash Book are taken and posted to the Ledger. As the vouchers are paid, they are stamped with the date and are filed alphabetically in a "paid" file. This procedure eliminates the use of individual creditors' accounts as ordinarily understood. The "unpaid" file is a record of accounts payable to which reference may be made at any time. The Charge Register is checked out monthly against the controlling account with creditors and against the "unpaid" file; all three totals must be in agreement.

Petty cash is handled on the imprest basis, the usual procedure and forms being utilized, except that distribution of petty charges is made through the Charge Register.

As each shipment goes out, a Shipping Slip in duplicate is prepared. The duplicate is forwarded to the office, upon the basis of which three invoices are made out:

1. *To shipper*—as verification;
2. *To office*—for posting to the *Customers' Ledger;* thereafter, these copies are filed in a loose-leaf binder which does duty as a Sales Book;
3. *To purchaser.*

From a monthly recapitulation of these invoices, the General Ledger postings are made.

As cash is received, it is entered in a Cash Receipts Blotter, from which, at the end of each day, the totals are transferred to the Cash Book. The individual accounts are posted from this Blotter to the Customers' Ledger.

The Voucher Checks are entered daily in the Check Register, this record being posted monthly.

MATERIALS AND SUPPLIES

Yarn is the most important item in a knitting mill, its cost each year amounting to a large amount, this probably representing from 75%-80% of the total cost of manufacture; hence, its purchase and use always should be given most serious thought. Since it is bought or contracted for in large quantities, and since its price is subject to considerable fluctuation, a Daily Quotation Record of some sort is maintained. The Inventory Record, likewise, is kept carefully, the basic separation being by contract—especially since yarn is purchased from several different mills. On this record are shown the amount, the price, and the delivery dates.

As the yarn is received, a check is made of its weight, this being noted on a slip which is made out for each case, showing therefor the case number and purchase price. Each such slip is filed with the yarn clerk, and an entry to cover made in the Yarn Book. As these containers are used, the ticket on each case is sent to the office and its corresponding slip removed from the file. In this manner, a perpetual inventory is maintained over all yarn on hand. As each case is emptied, it is weighed; the difference between the weight of the empty case and the total weight noted gives the weight of the yarn used.

Usually, yarn is purchased on a 2% basis, this percentage being allowed for cone and paper weight. When yarn is bought on cones, it is wrapped in paper to prevent its sticking; cone yarn is purchased more than the other kind.

After the slips are forwarded to the office, the tare percentage is deducted, after which the net weight is checked

against the contract record. The purchase price per pound multiplied by the slip poundage equals the total value of the yarn used.

Certain persons are given authority to make out the Purchase Requisitions, these being prepared in duplicate:

1. Kept by maker;
2. Sent to purchasing department.

The Purchase Order is prepared in triplicate:

1. To vendor;
2. To receiving clerk;
3. Filed "on order."

As material is received, it is checked by the receiving clerk who prepares two slips:

1. Retained;
2. To purchasing department to check against Purchase Order.

Rush purchases, when received, do not go through stores, but are charged directly to the departments requiring the materials.

Materials, as needed, are issued on Material Requisitions, the daily consumption being determined by totaling each day's slips. Expense supplies, as needed, are issued upon a different requisition. Both classes are sent to the office daily, summarized there, and the required entries prepared therefrom weekly.

LABOR

Most of the labor in a knitting mill is piece-work. Yarn is knitted into rolls, the knitters being paid by weight. From the knitting room the cloth may be sent to the bleaching machines and thence to the cutting room, or it may go directly to the cutting room; in the latter place, the material is cut into dozen lots. After being cut and tied into dozens, it is sent to the finishing room with a tag attached showing the style and number of operations involved. This tag is divided into sections by perforations, the sections corre-

sponding to the operations involved. Further, this tag shows knitter's number, weight, size of roll, and other data deemed desirable. As each finisher completes an operation, the square denoting that operation is clipped from the tag. These slips or squares are pasted into books and are turned in each week for verification and for pay-roll preparation. They are numbered serially so that no duplication can be made by the operatives without quick discovery.

Frequently, inasmuch as day-work usually is but a small portion of the labor total, the day-work cost in some mills is treated as indirect expense, only the piece-work being considered as a direct cost. Naturally, it is not difficult to see that this practice in treatment is entirely wrong, for in many mills there is no question but that the separation as between piece-work and day-work has no relation between the separation of direct cost from the indirect cost. Direct labor determination rests primarily upon the direct contact of the labor with the article itself; it changes its shape materially and brings it nearer to its completed state. Indirect labor does not physically change the article, merely assisting indirectly in its completion.

A Weekly Recapitulation of the Pay-Roll—an analysis—is prepared by departments in which the direct and the indirect labor are segregated.

NON-CONTROLLABLE EXPENSES

Certain items, as depreciation, taxes, insurance, water, and so forth, remain fairly constant as to consumption. Nevertheless, the apportionment thereof is not a simple task. Of the various ways of figuring depreciation, the straight line and the fixed percentage (or fractional substitute for the latter) methods are representative; in the present case, the fractional substitute method is utilized. For all practical purposes, however, the straight-line method is looked upon as being sufficiently accurate; where used, Mr. Stephen Gordon, in his book on Cost Finding in Knitting Mills, offers

the following depreciation rates: winding machine, 7½%; knitting machine, 7½%; finishing machine, 7½%; bleaching machine, 15%; brick buildings, 2½%; concrete buildings, 2%; wood buildings, 5%. Mr. Gordon has had so much experience in the problems of these mills, that his deductions may be considered as reasonably accurate.

Depreciation is apportioned in proportion to the valuation of fixed assets in each department; taxes are apportioned in proportion to the square feet space of each department; insurance is apportioned on the basis of the valuation of the fixed assets by departments; water is apportioned on the basis of departmental consumption. A Fixed Charge Summary is prepared monthly to cover the distribution of these items.

EXPENSE APPORTIONMENT

As has been suggested, this plant is departmentalized. There are four Monthly Recapitulation Sheets which contain all items of expense and overhead by departments. These follow:

1. *Fixed Charge Sheet.* On this sheet are distributed the fixed charges as depreciation, taxes, water, and so forth, mentioned above.
2. *Material and Expense Supply Summary.* From this sheet is obtained the amount of miscellaneous supplies that have been requisitioned from the storeroom during the month.
3. *Voucher Register Summary.* Hereon are included all expense items directly charged to the departments through the Charge Register, as under manufacturing and selling expenses, including salaries of executives, and so forth.
4. *Pay-Roll Summary.* From this is obtained the amount of the indirect labor.

Upon the basis of the above, a Summary Analysis Sheet is prepared upon which are shown all expenses for each department.

As mentioned previously, the departments separate into

the two usual groups of productive and non-productive (or contributing). Each is allotted its share of the fixed charges, expenses, supplies, and indirect labor. Then the total expenses of the non-productive departments are redistributed to the producing departments upon some basis assumed as giving a fair diffusion; in this case, the basis is the direct labor expended. Perhaps such a basis may be criticized adversely, and yet it is used more generally than any other one, because of "its simplicity and the ease with which calculations can be made."[1]

DEPARTMENTAL COST CONTACT

As mentioned above, the yarn is knit into cloth from the cones, or first it is rewound onto bobbins. If desired, the operations of winding and knitting may be kept separate, or they may be combined. If separated, the costs, likewise, must be separated.

In knitting and winding, the labor cost per unit is determined, because if the labor cost of winding a certain quantity of yarn is known, the expense burden may be determined by multiplying the labor cost by the percentage of expense. Units are established for this purpose, by taking each size yarn and finding a standard elapsed time in which to wind in hundred-pound lots. Each unit is proportionate to the time elapsed to wind this base hundred pounds. For example:

Size	Time—100 lbs.	Unit
8—	30 min. 20 sec.	1.00
10—	39 min. 25 sec.	1.30[2]

The number of pounds wound per month of each size is secured from the Production Reports; this is multiplied by the unit involved and cost. The total direct labor divided by the total units wound produces the labor cost per 100 pounds.

[1]Eggleston, *Cost Accounting.*

[2]See Stephen Gordon.

The same method of expense determination is used for knitting labor cost. The total bleaching department expense is developed on the Expense Analysis. As the bleaching is a process in which no proportions are necessary, the labor cost per each 100 pounds is determined by dividing this into the labor of bleaching. Dyeing is included in bleaching. Knapping cost may be included with cutting or a separate department may be maintained. In the latter instance, the procedure reflects that of bleaching. In the present case, the separation is not made.

As in the other departments, the usual expense analysis is prepared for the cutting department. The labor cost is allocated by units. Tests are run for each style and the labor cost apportioned per unit. In the finishing department, the usual analysis is made of expenses. In finishing, there are the direct items of piece-work and a fair amount of day-work. Adding all the piece-work prices for each style plus the percentage of direct day-work to piece-work, the total direct-labor cost of finishing is secured.

The folding and packing expense is figured similarly to that of the other departments; this department is operated upon a piece-work basis. Units are established by tests, and the labor applied proportionately. In the shipping department, the expense is figured on the Expense Analysis Sheet, and the labor cost is apportioned by styles.

As the yarn passes through the processes of manufacture, all waste is weighed systematically and a percentage arrived at, based upon the pounds used. This percentage is corrected at intervals.

After the yarn is knit into rolls, the aforementioned tag is placed upon it, and a mark is stamped upon the roll itself, giving the knitter's number, the machine and the size of the roll. As the material is bleached, the loss difference, if any, is noted on the tag. As each roll is cut, a report is filled out stating the type and weight of cloth, plus the dozens obtained.

A definite weight is set for each style and age of garment, and the number of square inches of cloth used to cut each such garment is known. The weight of each garment is in proportion to the square inches required to lay it up. Taking any garment as a unit of 1, the other styles are in proportion, depending upon the square inches required. A Unit Summary Sheet is prepared, which tells at a glance the unit of each style and age. As each roll is cut, the amount obtained from the roll in dozens and pounds is noted, and the difference between the actual amount of the roll and the amount obtained represents the cutting waste.

In the matter of thread and trimmings, the process of taking a full cone, weighing it, finishing a dozen or so of garments and weighing the cone again, gives the quantity used on each style.

Naturally, after the basic units are established, tests are run from time to time so that they may be corrected, should this appear necessary.

The cost of the cloth up to the cutting-room point is figured on a pound basis—this including the cost of the material itself, the labor, and the overhead. The basis for figuring the costs from the cutting room on up to the finished product is the dozen. To recapitulate: Allowing a certain amount of waste in knitting and a certain allowance for tear in the yarn, in knitting 100 pounds of cloth something more than 100 pounds of yarn must be used. Multiplying this latter figure by the cost per pound, the cost of material used in knitting 100 pounds of cloth is secured. To this are added the labor of knitting and bleaching, and the overhead expense per 100 pounds. This total, divided by 100, results in the cost per pound of cloth. To the piece rate of each operation is added the percentage of direct labor, and to this the expense as obtained from the Expense Analysis. The cutting-room labor is determined by the unit method from the Expense Analysis and the percentage of overhead. The folding, boxing, packing, and shipping

departments costs are figured in a similar manner. No total loss results from waste since a certain amount of revenue is secured from the sale of whatever is salvaged. The total of this last item per month divided by the number of pounds knit is a credit to be subtracted from the cloth cost.

A Garment Cost Sheet is not a difficult form to prepare or interpret. In the heading, the following information is noted: Material; Style; and Date. Columns are found from left to right across the sheet, each one corresponding to a certain size of garment:

Cloth Unit				
Reg. Cloth—W. T.				
Cuff				
Reg. Cloth—Lb.				
Cuff—Do				
Total Cloth				
Less-Waste Cr.—Lb				
Net Cloth Cost				
Total Finishing Mat				
Total Packing Mat				
Total Misc. Mat				
Total Material				
Total Prod. Labor				
Total Expense				
Total Mfg. Cost				
Selling Cost				
Commissions				
Loss on Seconds				
Total Cost Sold				
Selling Price				
Profit—Loss				
Percentage of Profit—Loss				

MONTHLY STATEMENTS

All Sales Invoices are recapitulated by dozens of each size and style. The manufacturing cost of each is figured, the resulting total giving the total cost of goods sold. This is deducted, inclusive of selling and general expenses, from the amount received (net sales), and the remainder represents profit or loss for the month.

Certain reports can be used to advantage by the executives:

Production reports of each style
Costs
Cotton prices
And so forth.

Problems

(*a*) Prepare a chart of accounts for a manufacturer of hosiery. The company operates four mills, the product of which consists of numerous grades and styles, in both cotton and silk.

Indicate in this connection your handling of the Loss (Gain) on Estimates accounts.

(*b*) The Sweet Sleep Comfortable Company was incorporated in the state of New York, in 1905, to manufacture cotton and woolen comfortables. In the slack season they produce children's play clothes. The comfortables are of two grades: Cotton-filled and virgin-wool filled. The wholesale prices range from $18 to $90 a dozen, sales being made all over the country.

The factory is of wood construction, favorably situated to the railroad. Labor is plentiful. The building is three stories in height, well lighted, and a blower system purifies the air. The raw materials come from the South.

Internal transportation is by trucks and by a conveyer belt system. The comfortables are full length, 72 inches, are packed in single cartons, each containing one comfortable. Sales of products now approximate $2,000,000 yearly, with an increase in business in both lines each year.

The organization is as follows: Board of directors; president, with legal counsel reporting direct to him; one vice-president in charge of both sales and financing; treasurer and general manager who is the boss of the superintendent, the latter in turn supervising all experimental work, the comfortable department (filling, trims and covers, finishers, and cotton department), and the play clothes department. The sales manager heads up both the New York office division and the local sales staff. The office manager is responsible to the general manager and in turn is over the accounting and credit departments. The secretary keeps the corporate records.

The company buys white cotton goods in rolls of 1,000 yards each, from the mills, this material being known as grey goods. These rolls are shipped to four different print works at which places the patterns are printed upon the grey goods; the four

sources of supply are used to prevent any tie-up of the manufacturing schedule. When the printing has been finished, the rolls are sent to the plant in the state of New York. On the stock records, these are known as Trims and Covers. The raw cotton and virgin wool are purchased from brokers, the cotton coming in from the South and the wool through New York City and Philadelphia. The colored thread used in stitching is a product of a nearby plant, and the cardboard cartons are secured in the Middle West.

All trims and covers are received in the basement together with the raw cotton and wool. From there these materials are placed in process:

1. The covers are cut to size as per production orders.
2. The covers are then filled with cotton or wool as specified by such orders.
3. Scrolling machines sew the tops and backs together. The border then is put on, and the ends closed. This finishes the comfortable.
4. By belt conveyer, these comfortables are transferred to the next floor where they are placed in cartons. They are fastened by machinery. The cartons are stenciled to show the number and style of comfortable packed therein.
5. At this point the comfortable is ready for shipment or for storage in the attic until the time of shipment.

This product is seasonal, the peak of production being in the first six months of the year. Seventy-five per cent of the shipments are made in the last three months of the year.

In the slack season, this company manufactures play clothes: Indian chief outfits, cowboy outfits, scout outfits, riding breeches, baseball uniforms, football pants, and basketball pants, ranging in size from 4 years to 18.

The manufacturing process for these clothes is simple. The finished cloth is purchased from the mill, and then cut up into the different styles of play clothes and sizes by means of an electric cutting machine. The trimmings are purchased in the finished state. Electrically driven sewing machines with girl operators finish the operations. The clothes are packed in boxes, one suit to a box.

There is no employment department, the new workers being recommended by those now on the force. The total number of employees is about 200. The superintendent selects the employees. Labor turnover is low, most workers being on a piecework basis. Wages of experienced girls average $22 per week.

The hours are from 7 a.m. to 4:30 p.m. No welfare work is done; the possibility of accidents is remote, only one having occurred in three years. The employees are a contented lot.

Sewing machine operators are paid a fixed rate per dozen garments, the daily average being about $3 per day. Scrolling machine operators are paid 50 cents a dozen, the daily earnings averaging $4 per operator. The girls in the cutting room and in the cotton department are paid a day rate. All male workers are on a day rate basis, from $3 to $6 a day being earned. All promotions are made from the force.

The accounts in use at present are as follows:

Sales: credited with all sales and debited with all returns.
Cotton, Wool, Linters: debited with purchase cost of these items and credited with return purchases.
Trims and Covers: purchases debited and defective materials credited.
Miscellaneous Merchandise: charged with sundry items as thread, needles, ribbonzene, twine, silk, and so forth.
Stitching: charged with productive labor of stitchers.
Seaming: charged with productive labor of seamers.
Bordering: charged with productive labor of borderers.
Closing Ends: charged with productive labor of end closers.
Cutting: charged with wages of cutters who cut comfortables to size.
Supervision: debited with wages of superintendent.
Labor Cotton Department: charged with non-productive labor of this department.
Non-productive Labor: debited with wages of foremen, cleaners, sweepers, and packers.
Building Maintenance: debited for building repairs.
Factory Supplies: debited with cost of all factory supplies purchased.
Machine Repairs—General: debited for repairs to machines.
Light and Power.
Taxes: charged with all taxes incurred—city, county, state franchise, capital stock.
Insurance: charged with all insurance carried—fire, liability, accident, compensation, occupancy, and burglary.
Coal: debited for all coal purchased.
Depreciation: debited for yearly depreciation on assets: Machinery, 10%; Autos, 30%; Furniture, 10%; Shaftings, 20%; Pulleys, 20%; Hangers, 20%; Conveyers, 20%; Building, 4%.
Repairs to Shafting, Pulleys, Hangers.
Miscellaneous Factory Repairs.

The above accounts are closed into Manufacturing, this account being opened at the end of each year.

Other accounts in use are:

Cost of Goods Sold: holds the transfers of all accounts which are concerned with securing gross profit, including debit balances in inventory accounts. Gross profit is transferred to Profit and Loss.
Packing Materials.
Traveling Expenses: debited with salesmen's expenses while on the road.
Outfreight: on customers' merchandise.

Freight on Returned Merchandise: debited for freight paid on returns of sales.
Salesmen's Salaries.
Commissions: commissions are calculated upon gross sales made.
Rent: debited for rent paid for office space in branch offices.
Storage: debited for expense of storing goods prior to shipment.
Collections: debited with expenses of collections.
Executive Salaries.
Legal Expenses.
General Expense: debited with sundry items not provided for elsewhere.
Office Supplies: debited for cost of carbon-paper, letterheads, and so forth.
Office Expense: debited with salaries of office employees and costs of auditing.
Postage.
Interest on Mortgage.
Interest on Borrowed Money: to record interest charged by banks.
Sales Discount.
Purchase Discount.
Bad Debts Recovered: credited with income received from accounts previously charged off.

The above accounts relate to the nominal group; the following are concerned with the real group:

Cash on Hand: for undeposited cash.
Cash in Bank.
Petty Cash.
Notes Receivable.
Accounts Receivable: This is a controlling account.
Reserve for Bad Debts.
Inventory—Cotton, Wool, Linters: debited at end of each year with inventory on hand.
Inventory—Trims and Covers: same comment.
Finished Goods: same comment.
Land.
Buildings.
Reserve for Depreciation of Buildings.
Automobiles.
Reserve for Depreciation of Autos.
Furniture and Fixtures.
Reserve for Depreciation of Furniture and Fixtures.
Machinery and Equipment.
Reserve for Machinery and Equipment.
Notes Payable.
Accounts Payable.
Mortgage Payable.
Capital Stock Preferred: credited only with actual issues.
Common Stock: same comment.
Profit and Loss: gross trading profit credited hereto from Cost of Goods Sold account, and all income and expense items not otherwise taken up are transferred to this account.

Both groups of accounts are given above in the order in which the detail items appear upon the General Ledger.

The Balance Sheet is commented upon as follows:

1. Running form.
2. Subgroupings on asset side:
   Current: Cash, Accounts Receivable less Reserve, Notes Receivable.
   Inventories: Cotton and Wool, Trims and Covers, Packing Materials, Finished Goods, Miscellaneous Merchandise.
   Fixed: Play Clothes Machinery, Land, Buildings, Machinery, Equipment, Office Furniture, Autos.
   Deferred: Prepaid Interest and Insurance.
3. Subgroupings for liability side:
   Current: Accounts and Notes Payable.
   Reserves for Depreciation: Buildings, Machinery and Equipment, Furniture, Autos.
   Fixed: Mortgage Payable.
   Capital: Common and Preferred Stocks.
   Nominal (Surplus).

The Profit and Loss Statement is commented upon as follows:

Cotton, Wool, and Linters.
   Material Consumed.
Trims and Covers.
   Material Consumed.
Miscellaneous Merchandise.
   Material Consumed.

TOTAL CONSUMPTION

Productive Labor.
   Stitching.
   Seaming.
   Bordering.
   Closing Ends.
   Cutting.
   Play Clothes Labor
Indirect Expenses.
   No comment.
Balance, Manufacturing Cost.

TRADING SECTION

Sales.
   All in one figure.
Cost of Sales.
   Inventory of Finished Goods 1/1.
   Add—Manufacturing Cost.
   Deduct—Inventory of Finished Goods 12/31.
Gross Profit.
Selling Expenses: Packing, Traveling, Outfreight, Freight on Returned Merchandise, Storage, and so forth.
Selling Profit.
General and Administrative Expenses.
Net Income.
Deductions from Income: Interest, Sales Discount, Bad Debts.
Total Income.
Additions to Income: Purchase Discount, Bad Debts Recovered, Profit on Machinery Sales, and so forth.
Net Profit for Period.

The general manager receives weekly reports as follows:

Accounts receivable balance.
Cash balance in bank.
Notes payable balance.
Notes due the bank with due dates of each note.
Number of dozen of comfortables ordered to date.
Number of dozen ordered same date last year.
Number of dozen shipped to date this year.
Number of dozens shipped last year same date.
Number of dozens finished to date.

The forms now in use, in part, comprise the following:

1. *Purchase Requisition.* All purchases are routed through the purchasing agent, and all invoices are approved by him before being passed for payment. The Purchase Requisitions are written by the superintendent, are issued in duplicate on different colored paper, are numbered consecutively, and are disposed of in the usual manner. Rush material is requisitioned on a form printed in red.

2. *Purchase Order.* These are numbered consecutively, issued in duplicate, and are disposed of as under: original to vendor and duplicate to receiving clerk to be used by him as a Receiving Ticket.

3. *Cash Receipts Record.* This is a simple form showing Gross, Discount, and Net amounts. All cash receipts are deposited intact in bank, and the function of the receiving cashier is separated from that of the disbursing cashier.

4. *Check Record.* This is a simple form ruled to conform to the ruling of the receipts record. All payments are made by check, and a receipt is required in addition. Each check payment is supported by a voucher which must be approved by the treasurer before payment is made.

5. *Petty Cash Book.* This is a simple record requiring analysis each month in that only one column holds all the payments made. The petty fund is operated upon the imprest basis, a receipt being required for each payment.

6. *Purchase Record.* This is a simple form permitting merely the usual distributions in accord with types of purchases made. It is not operated upon the Voucher Record principle in that a Purchase Ledger is used.

7. *Sales Order.* This order is made out by the salesman. The original is sent to the home office, and the yellow duplicate is handed to the customer. These forms are signed by the customer's buyer and the salesman. From left to right across the page, the body of the form shows: Dozen, Style, Size, Weight, Patterns, Colors, Price, Amount. Terms are 2/10, f.o.b. ship-

ping point. Shipment might be made on July 1, for example, and dating be set at October 1.

8. *Shipping List.* The original is sent to the office, and the pink copy goes to the customer. From left to right, the body of this form shows: Style, Size, Description, Number of Dozens, Price, Amount. The heading provides for including Order Number, Invoice Number, Address, and shipping instructions. At the foot of the form space is provided for the packer's signature and for the counter's signature.

9. This form is a linen strip that is sewed on all comfortables which are shipped into the state of Pennsylvania, inasmuch as the law of that state, Act of Assembly Approved June 14, 1923, requires the use of such a form to show: whether the comfortables are filled with cotton or wool, the name and address of maker, the permit number assigned maker. Also, the name and address of the firm that is to sell the comfortable must be set out (so-called vendor).

10. This form is provided in three copies, the first of which goes to the office and from which the billing is prepared; the second is the acknowledgment copy that goes to the customer (pink); and the third copy (blue) is the shipping order which shows exactly what has been shipped. This form is practically the Shipping List for the play clothes. The sizes are in terms of years (or ages). This form is duplicated in a second one: The first of three copies is prepared when a customer sends in his order, whereas the second is used by the salesman when he secures an order, this second being only of two copies instead of three—the white original goes to the office and the yellow duplicate is given the customer.

11. *Perpetual Inventory.* A record is kept of all materials—raw and finished, a card being made out for each class of material and for each kind and size of finished goods. In the heading the article classification is to be shown in number code, and the location is to be indicated. The ruling from left to right provides for Date, Quantity, Received, Withdrawn, Balance, the record being only by quantities, not by values at all. The size of the form is 8½ by 11, printed on white cardboard.

The other forms which might be mentioned are so negligible in ruling as to merit no consideration.

Requirements:

In the form of a report, submit a complete new system for this company, covering accounts, records, statements, and so

forth. Provide for the necessary controls; place all factory operations in a separate set of records controlled by an account upon the General Ledger. The emphasis in this report should be upon the factory operations—accounts, records and forms related thereto. In part, the solution of this problem contemplates the building of a complete cost system.

XX

CLOTHING

Men's and boys' clothing. Manufacturing a coat: operations; preparing sample coat; chart of accounts; cost of sales.

THE garment-making trade may be separated into a number of distinct lines, the following being representative:

Cloaks, suits, skirts
Dresses
Waists
Boys' clothing
Men's clothing
Rain-proof clothing
Custom tailoring
Ladies' tailoring
Corsets
Kimonos and wrappers
White goods, lingerie, and muslin underwear
Misses' and children's garments

In certain instances, some of the above may be combined —as men's and boys' clothing, dresses and waists.

This system of accounts adaptable to a concern manufacturing clothing, in relation particularly to the cost feature, is based upon estimates. Hereunder, the job or product plan is looked upon as being impracticable because of the variety of the operations; hence, it is not necessary to determine the cost of each separate unit or lot passing through the shop. Primarily, departmental operations are attempted since these are deemed sufficient for purposes of efficiency.

Inasmuch as the size of this book does not warrant a complete discussion of a particular system related to the garment trade, it is proposed to consider briefly only one of the activities mentioned above—the manufacture of a man's coat—and to do so primarily only in general terms. This

should be sufficient as a foundation for the students' work in solving the first laboratory problem offered in connection with this chapter, this being an actual case. If space permitted, this particular problem would have been discussed, as to solution, in the chapter.

MEN'S AND BOYS' CLOTHING

The type of activity commented upon relates to the manufacturing of coats, vests, trousers, and overcoats for men and boys. These garments are made either by regular clothing houses or by contractors. Relative to the latter possibility, some houses cut the material, after which it is handed over to contractors who manufacture the garments at a certain price per piece; again, only a portion of the manufacturing operations are performed by contractors.

If work is done by contractors, the accounting related thereto, from the standpoint of the garment house, is a simple matter; the material passed over to the contractors is charged to them in accounts carried in a separate Ledger, the Contractors' Ledger. Also, as is frequently the case, money is advanced to these contractors to help them pay their employees, since they are apt to conduct their business without hardly any capital. These advances are charged to the contractors in the Ledger mentioned. When materials have been worked up and are returned, the credits involved are inserted in the accounts, after which the difference, if a credit, is paid over to them. Naturally, in order to operate this Contractors' Ledger, a controlling account must be provided in the General Ledger, and columns must be added to the books of original entry so that the proper control totals are accumulated.

In the shop, the work passes from hand to hand, each operator doing only a specified type of labor. Basically, the principal operations may be indicated as cutting, fitting, machine-sewing, pressing, basting, band-sewing, inspection, busheling, and tailoring. In the cutting room, the cloth

and linings are spread out on tables and the patterns are marked thereon with chalk. Then, depending upon the thickness of cloth under fabrication, the cutting is done either by machine or by hand.

After the cutting operation is finished, the various pieces are ready to be made up. The parts for each garment are assembled separately and are sent to the various rooms, depending whether a bundle is to come out as coats, vests, or trousers. The fitting operation contemplates the trimming of the different pieces to the exact size; after this has been done, tickets are sewed on each part so that the assembly will follow readily.

Power machines sew the seams, do the felling and the tacking, do the basting, and perhaps make the buttonholes and sew on the buttons. The pressing is done either by hand or by machine, light pressing being by the former method and the heavy work by the latter; more pressing is necessary in connection with the finer grades of garments than with the coarser ones. Basting is necessary on coats, vests, and pants; coats require the most of it. On a coat, for example, the cloth is basted to the canvas and then this top is basted to the lining.

The buttonholes usually are hand-made; also, the buttons, labels, and hangers ordinarily are sewed on by hand. During the work of making a garment, frequent inspection is necessary, the last one occurring after it is supposedly completed. If defects are discovered in a completed garment, bushelers (tailors) eliminate them; at times, tailors are on hand for doing the fine work such as putting on silk facings or velvet collars.

MANUFACTURING A COAT

In order to develop the present general discussion along lines more definite than those offered in the section above, it is proposed to comment briefly concerning some of the accounting principles particularly applicable to a typical

coat shop. In one such place, the operations in detail may be illustrated roughly as:

Trimming and ticket sewing
Making lower and cash pocket
Making flap
Putting body lining together and making inside pocket
Making lining for sleeves
Joining sleeves and sleeve lining
Stretching and pressing top collar
Making under collar
Making coat body
Assembling lower pockets
Making upper pocket
Basting on stiffening canvas
Assembling lining with body (with top)
Assembling complete coat—sleeves, top collar, and under collar
Making buttonholes
Pressing
Putting on buttons, labels, and hangers
Inspection
Busheling

The first step in manufacturing a coat contemplates the issuance of a Production Order, say, by the head cutter. On this order, the numerous parts of the garments to be fabricated must be shown. Further, each order must specify style, size, and quantity. Whatever may be the original size, an increase or decrease therein may be ordered by the person who acts as grader, so that the requisite pattern may result for the various sizes to be produced.

Following this, a sample coat is made up, and upon the basis of this sample a coat estimate is prepared by means of which the cost of manufacture is determined. The Coat Estimate Sheet shows the material or stock cost separated as between cloth cost and cost of trimmings; next, the conversion cost is set out, this being the direct labor subdivided by operations. Following this, a proportionate amount of overhead is added, this being computed upon a productive labor basis. To the sum of the above elements is added an amount representing the selling expense involved; the final

cost results. Should an estimate be prepared for an entire suit, as coat, vest, and pants, the form is columned at the right, one column for each such unit. After the estimates are prepared, the shop is ready for the season's work. Garments are manufactured in lots, the composition of these depending upon the sales orders on hand.

The chart of accounts need not be elaborate, the vital point in this connection being to have the accounts requisite for controlling costs and for the preparation of adequate statements. It is unnecessary in the present instance to offer a complete code, inasmuch as many of the accounts are the usual real and nominal ones encountered. The inventory group, however, is the collection of current interest; it follows:[1]

Inventories:
- Raw Material
- Cloth in Process
- Trimmage in Process
- Waste
- Factory Labor
  - Sponging—Examining
  - Cutting
  - Trimming
  - Operating
  - Fitting
  - Basting
  - Finishing
  - Buttonholes
  - Buttons
  - Pressing
  - Busheling
  - Sundry Inspection

In addition to the above, provision must be made for a Burden account.

If garments are in the process of manufacture when the accountant arrives, it is necessary to open accounts for the inventory of cloth and trimmings in process, as well as for

[1]Referring to the charts in Chapter XII, determine which one the present method of treatment follows.

certain labor (as sponging, examining, and cutting) and for the overhead to date. The raw-material stock must be controlled properly through the use of Stock Records, Requisitions, and Requisition Summaries. In connection herewith, each kind of cloth is given a number known as the "swatch" or sample number, for purposes of ready identification. The pay-roll is separated into direct and indirect labor, the distribution thereof being by Journal entry.

The cost of sales determination is based upon the Cost Estimates referred to above. When the books are closed, the inventory in process and the finished garments are priced by means of the Cost Estimates. If any balances remain unabsorbed after this has been done, these must be cleared by adjustment entry through Profit and Loss. Because of the fact that piece-work predominates, a close estimate of labor cost may be made for calculating both the inventory and cost of sales. The actual amount of material withdrawn from stock and the pay-roll actually available are charged to the operation accounts involved. Therefore, it may be seen readily whether or not the estimates of cost are high or low; this fact permits the necessary corrections to be made.

Problem

(*a*) You are engaged by the Ru-Ja Manufacturing Company of New York City, a corporation manufacturing evening gowns and evening cloaks, to outline for them a simple departmental cost system with necessary forms and instructions.

The following information has been collected relative to the work:

Balance Sheet. A copy of the last Balance Sheet prepared contained the usual accounts covering cash, notes and accounts receivable, inventories departmentalized, machinery, tools, furniture and fixtures, notes and merchandise accounts payable, capital stock and surplus. You notice certain accounts specific to this business, as loans or advances to outsiders (contractors) through whom, at times, certain of the work is done; insurance premiums unexpired, advances to salesmen, unpaid salesmen's commissions, and loans payable are seen. When notes receivable are taken, they are discounted immediately at the bank.

Handling of books. The business is seasonal, there being two seasons in the year. The Fall season begins on June 1, and extends through to November 30, inclusive. The Spring season begins on December 1, and extends through May 31. The books are closed at the end of each season and statements prepared. At the time of statement preparation, a physical inventory is taken of the merchandise on hand.

Operation. The material used in manufacture consists of cloth fabrics, cotton goods, silks, voiles, linings, laces and embroideries, trimmings and supplies (thread and buttons). Boxes are used in which to send out the finished garments. The styles are made at the beginning of each season. Each design is given a style number, and the product is manufactured in lots—a certain number of dozen in each lot. When a style is designed, a cost or estimate sheet is prepared showing the detail elements of cost entering into each particular style number—the material, the labor, the overhead. Overhead is distributed on the productive labor basis. Each such cost sheet functions, likewise, as a Bill of Material.

The factory labor and pay-roll may be divided according to the following: cutters, machine operators, hand sewers, examiners, and pressers.

The designing department labor consists of the designers, machine operators, and finishers. The first aim of a garment manufacturer is to produce a line of sample garments. The samples produced are scrutinized carefully, and those selected for the season are given a number and a selling price.

The factory overhead consists of light and heat, electric power, factory rent, factory insurance, factory superintendence, indirect labor—including factory clerks—factory supplies, machine parts and repairs, depreciation.

The selling expenses consist of salaries paid models, show room rent, light and heat, show room expenses (cleaning, and so forth), shipping department salaries, twine and paper, freight, express, cartage, postage, salesmen's commissions, salaries and traveling expenses, advertising, and buyers' entertainment.

The general office expenses consist of postage, telephone, stationery and printing, carfare and petty expenses, insurance on manufactured stock and furniture, pay-roll, rent, light and heat, taxes, general supervision.

General. Statements are to be prepared twice a year showing departmental results. Physical inventories are to be taken at such times. Infrequently, under pressure of orders on hand,

certain work is farmed out to contractors, to whom materials are given upon which to work and to whom advances and loans are made to enable them to pay their labor prior to the return of the completed garments.

Requirements: Submit in the form of a report addressed to this company:

1. Chart of accounts
2. Description and method of keeping the detail accounts
3. All necessary forms and records properly ruled to scale, and headed
4. Description of forms and records to be used
5. Procedure for system operation

General Comment. Pay no attention to the sale of rags, since it is common practice to pocket any money therefrom received without making entry therefor on the books.

Treat purchase discounts as deductions from purchase cost.

XXI

COOPERATIVE MILK MANUFACTURING

Organization chart. Promotion plan. Finance plan. Operation plan. Payment plan. Accounting peculiarities. Organization of office. Plant operation: records and control. Distribution control and records. Statements and operating statistics.

This chapter makes available the principles of theory and practice of accounts related to a farmer-owned milk manufacturing and marketing cooperative association. When compared with the usual manufacturing and trading enterprise, an association of this type is found to be considerably different in character.

Due acknowledgment is made to Mr. T. Harlow Andrews, M.S., member of the staff of a Certified Public Accountant, for his valuable service in assisting the writer with this material so that it might be made available as a chapter in this book. Mr. Andrews has been engaged for a period of three or four years in this kind of work with considerable success. The system described, or which is the basis of this chapter, is an actual situation, but representative in character.

Many problems still remain unsolved, and the solution of others, of necessity, must be grounded entirely in personal opinion. Nevertheless, it is believed that the accounting methods and theories herein presented are developed as completely as is the economic and financial success and stability of the cooperative type of association itself.

ORGANIZATION CHART[1]

For the particular association under discussion, this chart is shown as Form 90. A certain overlapping of authority

[1]Compare this Chart with Charts 45 and 46, Chapter IX, *ante*.

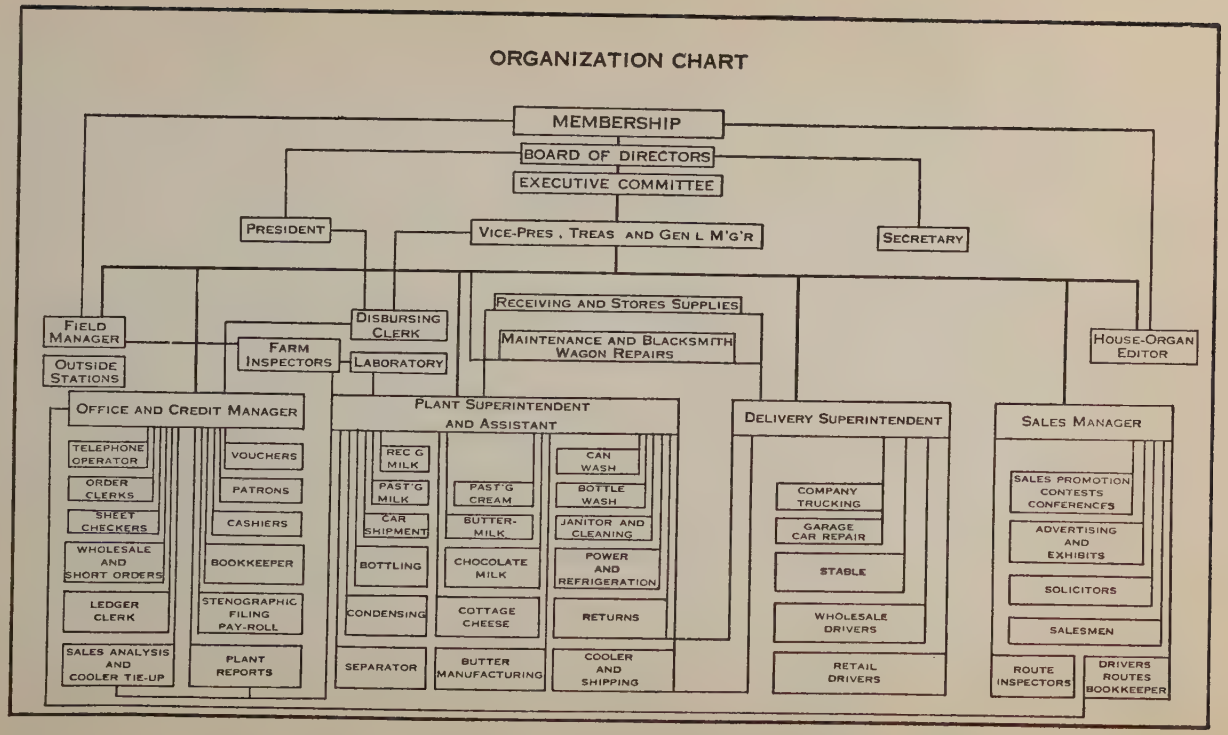
is noticed, but, under the existing circumstances, it was believed that this was impossible to eliminate.

PROMOTION PLAN

First, there must be a common need for a method of sale and distribution of dairy products whereby the producers thereof can control the selling prices, at least to the extent that the middlemen may be prevented from taking undue advantage of their uncollective bargaining. Geographical advantage has an important bearing upon success in that the possibilities are most favorable when milk producers organize around a large town or city, or (in outlying rural sections) near a railroad station which affords shipment to a large city.

After local meetings and propaganda have evidenced the interest taken in such a movement, the possible cooperators are solicited, initial membership agreements are taken and signed. After securing sufficient subscriptions, the charter is obtained, directors elected, and by-laws passed.

The regular membership contracts then are signed, and if the finance plan provides for it, the membership fee is paid in to provide the initial working capital. If a member cannot pay in advance, he is permitted to give a note for the total amount due. These notes are pledged in total at a bank or banks for a loan. This gives the association use of the money and pays the bank interest instead of the member. Its great drawback, however, is that ordinarily the directors are forced to endorse the notes personally; this means that they must assume considerable personal risk. It is not always necessary that the finance plan provide for securing any capital by an initial membership fee and the pledging of notes. Usually it decreases the directors' contingent liability if capital is secured only by simple deduction from patrons. The question as to which should be used depends upon what relation the fixed asset investment bears to capital during the first years.



Form 90: Organization Chart.

The arguments usually advanced to producers to secure their membership, may be summarized as follows:

1. Control of market and price;
2. Standardization of product;
3. Economy in sale and distribution;
4. Cutting overhead in manufacture;
5. Elimination of middlemen's and drivers' profit;
6. Elimination of "cross deliveries";
7. Reduction of cost of cartage to market.

In spite of the apparent justification for such a movement, numerous retarding factors exist. Farmers do not like to agree definitely to anything, and are not naturally cooperative. Then, too, a sacrificing, yet efficient, leader or manager is not readily found; also, farmers are not prone to paying the salary that a good manager should have. The personal liability of directors, officers, and members is a retarding factor, and as no more profit accrues to one than to another, no one likes to take the risks involved. The average producer fears low returns for a considerable period, is afraid of the liabilities involved, and prefers to let others establish the organization before he joins.

The initial cash budget plans that cash will be available for current expenses from the cash memberships paid and from pledging of members' notes. The plant building is partly paid for in cash from these sources and may be cared for temporarily by a bank mortgage which usually is taken up later by mortgage sinking-fund bonds sold largely to the association membership. The creamery equipment may be purchased largely on equipment notes. When operations begin, the farmers are held up on their pay from one to two months, which, because of the high turnover of product for cash, provides considerable working cash. However, under most favorable conditions, the initial period of operation is the hardest and should be considered most seriously by the promoters. Care should be taken in making the membership fee as high as can be borne by the largest number of producers and particular caution should be taken not to

construct a plant too large at the start; it is better to wait until sufficient cash is available and the members are "sold on the organization."

FINANCE PLAN

The first capital of the association is provided by membership fees paid at the time a producer joins the association, preferably in cash, but otherwise by note. These notes are pledged in blocks at one or more banks in the localities in which the producers are in the habit of doing business. The association in return deposits the patrons' payments to their credit in these respective banks, and this in time gives the banks much additional business. The plan usually is provided for in the by-laws to reduce each patron note by a set amount per hundredweight on all milk shipped in by each such patron and to turn this money over to the bank in reducing the association's loan on pledged notes.

The working capital, and what additional fixed capital is necessary over what is provided as stated above, is obtained by deducting a certain amount additional per hundredweight on all milk received by the association; this composes what is known as a revolving fund. Such a deduction goes on indefinitely, the idea being to have those producers who are shipping the largest amount of milk provide capital in proportion. When, in the opinion of the board of directors, sufficient working capital is at hand, or (if a maturity date was specified at the start), the deductions to the revolving fund are retired in the order in which made. In this way capital is provided by the active producers in exact proportion to the volume of their product handled. Detailed record is kept of each deduction, and once a year a certificate of indebtedness is issued to each producer for his year's total. These are called serial certificates, and interest is paid regularly on them once a year. Capital for erection of plant and for purchase of equipment is aided considerably, as a rule, by floating a first-mortgage bond issue with a

sinking-fund provision. Cash for the sinking fund usually is available by taking depreciation as an expense. It seems quite possible that when cooperative associations are faced by the problem of redemption of serial certificates, they will convert them either into mortgage or debenture bonds. This greatly aids the producer, in that at present his certificate of indebtedness cannot be pledged for a loan as the date of maturity is uncertain and is not considered by the banks as of much definite value. In some organization plans like the Dairymen's League, no Membership Certificates of Indebtedness are issued, the total fixed capital accruing through serial certificates which are given a definite maturity date a certain number of years after issue.

The great difficulty encountered by most cooperatives in financing is in constructing their plant; a decision must be made as to what shall be its capacity. A small plant will yield higher returns for some time if made just large enough for the initial volume of milk. Most cooperatives anticipate a great increase in membership if its success is proved, and hesitate to build a plant which soon will be outgrown. Particular care should be taken not to construct too large a plant, however, as the overhead on a small volume of milk is quite apt to be so heavy that a return to the producers on actual earnings will be insufficient for their efforts. The result is they become discouraged and withdraw.

According to the statute under which a cooperative association is organized, provision is made for withdrawal of members for a period of from one to two weeks each year. Members must furnish written notice of their intention at this time, and usually any paid-in membership fee will be refunded. The serial certificates, however, are not repaid until the regular time set by the board of directors. Membership loans are renewed yearly; if a member fails to renew or signify his intention to withdraw within the fixed time, his paid-in membership is forfeited. If he decides later to renew, his former privileges, usually, are restored.

OPERATION PLAN

The natural causes responsible for the cooperative marketing movement and which have made it a success in spite of its flagrant weaknesses may be enumerated as follows:

1. The economy of volume production. The use of the highest type of sanitary machinery at full capacity gives the milk better care than is possible by individual dealers, and makes small the prorata burden per unit of milk.

2. Sure sale. It is of considerable importance to the producer to know that whatever the condition of the market may be, his product will be disposed of at as favorable a price as possible. This offsets the depressing loss which always reverts to agricultural producers whenever there is a slight overproduction.

3. Collective bargaining by market experts. The size of the organization permits having in its employ one or more specialists in milk marketing who by scientific study of markets and marketing methods can bargain collectively for the producers.

4. Eliminate competition between producers. The selling of one farmer's products slightly under his neighbor's prices always has had the effect of holding prices down close to cost of production and in many cases below such cost. By the cooperative plan, prices are maintained even during the "flush" period in the spring when a surplus of milk is produced.

5. Studying market—stabilizing price. While this point is related to those previously mentioned, it is an important factor in itself and economically its effect on non-member producers is favorable.

6. Maintaining of definite standards. The maintenance of a good-sized marketing organization makes quality and sanitation its necessary attributes. These are the bases on which the buying public sees the greatest benefit from the organization. Handling in such quantities, with the best of

machinery makes the highest type of product easy to produce. It is possible for the organization to demand quality of its producers, and the civic health departments more easily can control the situation through this medium.

7. Efficient delivery service. The possibilities that present themselves in reducing delivery costs which ordinarily constitute about one-third of the consumer's price are unlimited when one considers the number of drivers who cover the same territory each day. A systematic rerouting lowers delivery cost appreciably.

8. Surplus disposal. By bringing together the total milk production, any excess over average requirements can be disposed of economically in quantity, whereas an individual surplus would be largely wasted. According to the most economical advantage at the time, the milk may be condensed for ice-cream mixes, separated for butter manufacture, or be placed in cold storage until there is a shortage of milk; but probably what is more advantageous, the milk is shipped to the larger centers where the market does not become so glutted. As this marketing can be handled in quantity through sales agents, a distinct advantage arises over the individual efforts of producers.

The argument may be advanced that these functions can be performed successfully by concerns with privately owned capital, buying the milk of producers and distributing it to the consumer. There are, however, distinct advantages in the cooperative organization over the privately owned type:

1. The profit, instead of going to a few individuals, is divided between producers and consumers.

2. The maintenance of a fair selling price has no particular interest for an individual distributor or individually controlled distributing company so long as the "spread" between the cost and selling price is satisfactory.

3. The privately owned company ordinarily contracts for a fixed supply the year around, leaving the producers to dis-

pose of their own surplus; this results in large individual losses.

4. The tendency is for the private distributor to encourage interproducer competition to his own financial advantage.

As to the handling of milk itself, this varies with the type of cooperative organization. A small association pasteurizing and shipping in cars to the larger cities is the simplest type, while the organization with hundreds or thousands of members, shipping to the large centers in bulk and manufacturing the surplus into condensed and evaporated milk, cheese, ice-cream, and so forth, is the most complex, especially as to volume and number of plants. The company with a reasonably large volume of milk, with a few hundred producers, performing all the manufacturing and distributing activities including the retail delivery of milk is believed to be the most complete representative example and is the type referred to for the most part in this chapter.

The milk is collected in two ways. Those patrons within trucking distance of the plant, so that the milk can be hauled in before any serious bacterial development takes place, have their milk picked up at their farms by haulers who deliver it at the plant; here it is weighed and the cans properly washed and sterilized. Those patrons situated farther away usually are favored by having a cooling station within easy driving distance to which they haul their own milk. After cooling to a low temperature to retard bacterial growth, the milk is drawn into glass-lined tanks on trucks and hauled to the manufacturing plant. At the main plant, the milk is received in the receiving room, weighed, tested, and pumped to glass-lined storage tanks, where it is cooled to a low temperature. It is then pumped from these tanks as required, passed through a filter or clarifier for removing sediment; then after some agitating and preheating, it flows through the pasteurizers which may be operated either by the steam temperature process or by electricity. After pasteurization, it is cooled quickly and is ready for putting into

containers or for further manufacture. The fluid bottled milk is bottled and capped by machines and placed in the cooler ready for loading. A portion of the remaining milk is conveyed (all milk is conveyed through glass-lined sanitary pipes) to the separators where the cream and skim milk are separated. The cream then passes through the cream pasteurizers and is ready for bottling. Heavy cream is bottled at 40% butterfat as ordinarily separated, and coffee cream is reduced before bottling to 20% by standardizing with milk. Any excess cream may be cured for churning into butter.

The skim milk resulting from the separation may be used for various purposes. A considerable quantity is manufactured into cottage cheese; some is treated with Bulgarian bacteria for manufactured buttermilk; some becomes part of a chocolate drink; some is sold as skim milk. The milk for shipping to larger centers is drawn in cans, after pasteurizing, and is tagged and packed with ice for shipment in milk cars. Condensed milk is manufactured regularly if a definite contract is being filled or when a surplus is available, provided this is the most profitable method of disposal.

This describes briefly the path of the milk itself. Servicing these productive departments are such departments in the manufacturing division as: can wash, bottle wash, bottle and product returns, bottle inspection, power and refrigeration, cooler and shipping, laboratory, janitor and cleaning, and so forth.

The wholesale delivery is done largely by a fleet of trucks serviced by a garage. The retail delivering is mostly by horses and wagons which, of course, render necessary the expense of a large stable and the repairing of wagons, harnesses, and so forth.

Each producer's milk must maintain a certain standard, and for milk beyond these standards there usually is an added compensation. The minimum city requirement for fluid milk is that it contain at least 3% butterfat. There-

fore, no milk is accepted which does not at least equal this test. Each farmer's milk is tested at least once per month by laboratory experts for both butterfat content and bacterial colonies per cubic centimeter. If the bacteria count is too high, the farmer is notified and his milk is not accepted until the condition is remedied. In computing payment, the farmer sometimes is penalized a certain amount per hundredweight if his bacteria count for the month exceeds 100,000, or whatever amount is set up by the board of directors as being the limit. A differential of 4 or 5 cents per point of butterfat beyond 3% usually is paid as a special premium for high-grade milk. The stables, milking utensils, milk houses, and cows of each farmer are inspected by licensed veterinarians each year, and company experts visit the farms more frequently, in order to keep the quality and sanitation at a high standard.

A few producers prefer to skim their milk and ship only the cream. This usually is permitted, but a deduction is made in settlement for the skim milk involved.

Provision is made in the state statutes governing the association for the handling of products of non-members; that is, the association may act as the agent of non-members. The usual plan is for the association to pay the non-member the same price as the member with a deduction called a "dumpage charge" of a fixed amount per hundredweight shipped to penalize him for not being a member and advancing capital to the association. The plan has an advantage in that the non-member's milk helps in absorbing overhead burden which otherwise would have to be distributed over a lesser volume of fluid. Also, the non-member's milk is not then being sold in direct competition with that of a regular member. However, since there is a tendency for farmers to hold out until the "other fellow" has tried the new proposition, its seems hardly fair that a non-member should participate at all unless he takes the same risk as do the regular members.

The effect of the association being a non-profit organization is more important than appears on the face of things. It means that the officers and directors themselves become liable for any losses which might be incurred in case they buy milk, cream, or butter for resale or manufacture; and, as a matter of fact, it is problematical what legal complications might be involved if the ordinary trading functions of buying and selling were undertaken by the association. The usual interpretation of the law is that no outside buying is permissible. This limitation prevents the company from performing one of the most essential services of successful management, that of operating as near to capaciy at all times as possible in order that no overhead expense will be wasted. The handicap under which the milk association functions is noticed in that it can use only what milk comes in. This means that the size of the plant must fit the supply rather than to regulate the supply to fit the plant. It means that the plant must be large enough to handle the "flush" of milk in the spring and the same overhead of fixed charges and burden departments must be absorbed by a volume one-half as large to which the supply diminishes in the early winter. It means, further, that sales efforts can be directed only to selling the minimum supply locally, where competition is intense, for if a larger market is gained it must be sacrificed when the supply diminishes. This whole disadvantageous condition apparently can be eliminated only by legislative action permitting the application of regular business methods.

In order to absorb overhead, obtain a better control of markets, and spread the benefit of its services to farmers, there is a tendency for the cooperative association to interest groups of producers in outlying districts to become members, either in the form of a cooling station, such as was mentioned previously, or as a pasteurizing plant from which milk may be shipped direct to a large city. Since the expense of administration, office, and selling is no greater,

as a rule, for the central plant, the prices obtained are larger than the station cost plus pooled price; hence, there is a benefit accruing to the main organization as well as to the station producers. The earnings are pooled and all the producers of the entire association share alike therein.

PAYMENT PLAN

The determination of the proper earnings to be distributed each month to the patrons of the association in payment for the milk shipped by them is an important result of the accountant's duty, and an accurate bookkeeping system is a necessary adjunct. From the standpoint of ordinary bookkeeping, the accounts must be kept on an accrual basis which, in the matter of allocating expenses to the proper month, must be carried to the extreme as each period should be complete in itself. In addition to this, as is presently described, it seems a matter of good accounting (and the only fair basis) to establish operating and deferred maintenance reserves to offset fluctuations in overhead burden during the different seasons and to adjust further the total of plant overhead, administrative expenses, and income charges, on the basis of weight of milk received instead of time (that is, a per-month basis). If this is not done, the producer of fall milk would be burdened by larger overhead per hundredweight because of the decreased volume at this season of the year; and since an increased fall production is essential, it is no more than fair that overhead should be absorbed over the year rather than over the month so as not to penalize the fall and winter producers by a burden which does not fluctuate with milk volume.

In arriving at the income for a month, it is necessary, also, to make provision for depreciation and losses on collections and to be careful in distributing to the proper period such charges as veterinary fees, legal expenses, accountant's fees, insurance, donations, and other deferred charges and expenses on which the invoices may not be rendered exactly

in the period for which the earnings are being computed.

The product inventory must be computed, and this is figured, ordinarily, at the wholesale prices of product manufactured rather than at market price for raw milk in order to give the producer in the month under review proper allowance for his particular shipments. It seems permissible and more accurate in this instance to depart from the conservative accounting axiom of "cost or market, whichever is lower" since the turnover is so rapid and any losses on the inventory will have been determined before the month's closing. The inventory of supplies must be taken physically, unless accurate perpetual inventory records are maintained. This inventory is checked, however, against what proves to be a normal consumption per month of the supplies in question. With all these facts, and having posted all income and expense accounts to the General Ledger, the balances are drawn off and the amount of the distributable income determined. With regard to the determination of operating and deferred maintenance reserves, it is necessary to calculate from prior years' experience the normal annual expense for repairs and seasonal activities, which then is divided into the twelve months. The actual expenditures then are applied to the reserves so created. The adjustment made to the total of plant overhead, administrative expense and income charges is determined, first, by calculating for prior years the average percentage of the actual monthly increments of these expenses to the accumulated totals for the annual period; also to determine the average percentage of actual monthly increments of pounds of milk received to the annual total. The (past experience) accumulated percentage of increments of each class of expense, divided into the actual accumulated total of expense of that class at a certain date, gives the estimated total expense for the year under this class. To this total is applied the accumulated past experience percentage of milk received at this date to the total, which gives the total amount of overhead to be absorbed

to date. This plan has the advantage of automatically absorbing any minor difference from month to month so that at the end of the year the reserve clears itself. This method is used in adjusting the monthly totals of each of the three classes of overhead indicated above.

After the total amount to be distributed is ascertained, it is necessary to know the total number of pounds of milk received for the month and to have the average test for butterfat relative to all milk received. It is further necessary, where a bacterial differential has been established, to know the amount of penalizing deduction to be made in total. To arrive at these results, considerable detailed record-keeping must be done. Each day, upon the receipt of milk, the receiving room records on large cards, one for each hauling route with patron numbers arranged in columnar form, the weight and number of cans of each producer's milk. Each card has space enough for one-half of a month. When this period is completed, these original records are taken to the office, footed and cross-footed so that each card balances and proves the correctness of the total. The clerk in charge of recording these facts makes up a columnar sheet, listing along the left margin the names of the various haulers' routes on which milk is collected. To the right of these names, columns are provided for the entry of certain facts, as follows:

1. Pounds milk, first half
2. Pounds milk, second half
3. Pounds butterfat, first half
4. Pounds butterfat, second half
5. Average test
6. Milk purchases
7. Accounts receivable deduction
8. Note deduction (membership)
9. Certificate of Indebtedness deduction
10. Hauling milk deduction
11. Dumpage
12. Hauling—own trucks
13. Bacterial deduction
14. Accounts payable—patrons

The assembly of this sheet constitutes a controlling summary of all patrons' transactions for the period. In preparing this, a detailed slip for each farmer is made in duplicate, the original of which is mailed when settlement occurs. On this slip is listed, by adding machine, each day's milk poundage, the totals of all of which are agreed with the receiving room record and the totals by routes (since the farmers' slips are filed during this operation according to routes); and the totals by routes are entered on the summary sheet. A report is received from the laboratory at the close of the month showing the butterfat content and bacterial classification of each farmer's milk. This test is multiplied by each producer's total poundage to arrive at the number of pounds of butterfat in his month's milk and the amount is shown on his statement. The total butterfat from each route is then totaled for the summary sheet. In this way, when totals are accumulated for all the routes, the total number of pounds of both fluid milk and butterfat is arrived at; by dividing the one total by the other, the average test of butterfat for the month is determined both for the entire plant and for each individual hauler's route. The bacterial deduction for each producer is figured by multiplying the number of pounds of class "2" milk by the rate established, and the total monthly deduction is merely the aggregate of the individual amounts.

Assume, for example, that the differential paid the producer for butterfat in excess of 3% is 5 cents per point. Then to arrive at the base price to be paid for the month on 3% milk, the total amount of bacterial deduction, as well as such minor earnings contingent on milk receipts as "dumpage" and hauling in company trucks, is added to the total distributable earnings; and this total is divided by the number of pounds of milk received at the plant for the period. This gives a base price for average test milk. From this price there is deducted 5 cents times the number of points which the average test exceeds 3%; the result is the

base price for 3% milk upon which each individual producer is to be paid.

On each patron's detailed statement there are provided, in addition to a listing of the pounds of milk and its total pounds of butterfat contents, spaces for the calculation of the toal to be paid and for deduction of such items as accounts receivable, notes receivable, hauling milk, Certificate of Indebtedness or dumpage, company hauling charge and bacterial deduction, if any, arriving at the net cash payment to be made the producer. In computing the payment for his month's milk, there is added, to the base 3% price, 5 cents (or whatever the per-point amount is set at) times

GREEN VALLEY MILK PRODUCERS CO-OPERATIVE ASSOCIATION, INC.

_____ NO._____

_____

POUNDS MILK RECEIVED		PATRON'S STATEMENT			
FIRST HALF	LAST HALF	MONTH OF _____ 192____			
		TOTAL LBS. @		PER CWT.	
		NOTE BALANCE LAST MONTH / THIS MONTH			
		MEMBERSHIP NOTE DEDUCTION			
		CERTIFICATE OF INDEBTEDNESS DEDUCTION			
		HAULING MILK ROUTE NO.	CANS @ EA.		
			LBS. @ CWT		
		ACCOUNTS RECEIVABLE DEDUCTION			
		TEST %	TOTAL DEDUCTIONS		
			AMOUNT DEPOSITED AT		
CLASS_____	CLASS _____	BUTTERFAT POUNDS			

Form 91: Individual Patron's Statement Form (Duplicate).

the number of points his butterfat test exceeds 3% and the total multiplied by the number of pounds of milk he shipped. From this total, the deductions listed above are made, arriving at his cash payment. The totals of all producers on a route are assembled to make up the route's total. As a test on the correctness of the computation of each route's milk purchase total, it is necessary only to figure that route's

milk as if it were one individual using the average test of the route instead of the individual's test. In explanation of the deductions made, it may be said that the accounts receivable deduction is for products or dairy supplies chargeable to the producer during the month. The note deduction is that made, as explained previously, on notes given in payment of the membership fee. The Certificate of Indebtedness deduction is made against each member-shipper for the revolving fund for fixed capital. The dumpage deduction affects non-members but only in place of the certificate deduction. The "hauling—own trucks" deduction occurs only where the company hauls for the producer and books a charge for this service. The deduction for hauling milk is the amount charged by the independent hauler of the producer's milk; this is made on the statement from the total which the producers receive, the total cost of hauling the route's milk being paid to the truckmen direct by the company and the amount charged back to the farmers. In case an advance payment on the milk has been made to the producer before time of settlement, this amount must be taken into consideration.

All these figures are posted to the Summary Sheet and are tied up and proved before settlement. This sheet is an important record since its totals control many of the detail Balance Sheet accounts on patron deductions, and so forth, and is the basis for the General Ledger entry representing all farmer transactions for the month. After the work is proved to be correct, the original farmers' copy of each patron's transactions for the month is mailed to him and the duplicates are filed with previous months' slips in numerical order according to farmers' numbers.

Having arrived at the total amount to be paid each farmer, checks are drawn for the amounts due. For the most part, this payment is handled by making deposits in the banks at which a loan has been obtained on membership notes for a total amount which is credited to the checking

account of each individual farmer doing business at these banks. This simplifies the payment considerably since it is necessary only to furnish the bank with a list of the credits to the individual farmer's accounts and to substantiate it by one check for the total. In some cases, individual checks are preferred and are made out as such and mailed to the farmer. As before indicated, the bank loans on pledged farmer notes as collateral are reduced immediately by the amount of membership note deductions made in the month's settlement.

Reference to a "thirteenth check" method of payment will occur later, this being used by some associations in distributing to the farmer any excess of reserved deductions or allowances which may have been made in anticipation of losses that did not materialize.

ACCOUNTING PECULIARITIES

The primary "capital accounts" of the association consist of those represented by the payment of membership dues when such are provided for in the by-laws. There are various gradations of this membership represented at all times; first, a membership note on which no payments have been made; second, a membership note partially paid; third, a membership note which has been paid in full and on which there has been issued a Membership Certificate of Indebtedness bearing interest from date of issue. Since ownership is reflected by these three stages of payment, the accounts must show a corresponding condition. The three ownership accounts are:

Certificates of Indebtedness Membership
Certificates of Indebtedness Partial Payments
Membership Notes Receivable

Offsetting the account of Membership Notes Receivable (a capital account) is the asset account of Notes Receivable —Patrons, which always is of a corresponding amount. The

account Certificates of Indebtedness Partial Payments represents the complement of the Membership Notes Receivable account so far as the total memberships not fully paid are concerned. Since memberships are not transferable, there is no need for transfer books of any description. The detail of the Membership Certificates of Indebtedness, together with the serial certificate record to be described later, is kept on a card file and is proved against the Membership Certificate stubs. A detail of Notes Receivable—Patrons account is kept, showing the monthly deductions made on the patron's transaction sheet and is controlled by the monthly summary. There is no detailed record of Membership Certificates of Indebtedness Partial Payments since it is the complement of Membership Notes Receivable in respect to the total membership fee. The above-mentioned accounts, assuming the initial membership fee is paid by note, are carried through the books as follows:

When the membership note is received:

Debit: Notes Receivable—Patrons (Asset account)
Credit: Membership Notes Receivable (Capital account)

When cash is received or a deduction made to reduce the note:

Debit: Cash (or milk purchases as shown later)
Credit: Notes Receivable—Patrons and with the same amount
Debit: Membership Notes Receivable
Credit: Membership Certificates of Indebtedness Partial Payments

When the last payment is made on the note, the Certificate of Indebtedness is issued and the following entry is prepared; this closes the note transactions both in control and detail:

Debit: Certificate of Indebtedness Partial Payments
Credit: Membership Certificates of Indebtedness

The association is legally and theoretically a non-profit earning organization, which places it, in this respect, in the

class with public and charitable institutions. However, the company is purely a business proposition and makes every effort toward increasing its earnings. Since it does not make a profit, theoretically, it should not suffer any losses. In this respect, in actual practice, even though the directors may be held personally liable, at the outset of operations it has proved to be impracticable to pay the producers what is actually earned because at the start the number of producers is limited and the plant has been constructed to accommodate an increased membership; hence, the heavy overhead, in addition to the expense of getting started, usually absorbs all the earnings, so that for a time it is necessary to build up a deficit. This period is the most critical in the company's existence because the directors are legally liable and the cash account is seriously depleted because the farmers must be paid a reasonable market price or they will refuse to continue sending in their milk. Therefore, although probably contrary to the law, the accountant must consider the fact that it is no more than right that the producers who join the association after it is well under way should bear a part of the organization expense, as the deficit account is amortized over the succeeding years as fast as the earnings permit.

In some associations, it is felt to be impossible to ascertain by the time of payment each month the actual distributable earnings, and in fact some officers and directors feel that they should reserve a certain percentage of earnings to provide for unforeseen losses. In either case, this difference, if any, is often repaid to the producer at the end of the year when the final accounting is made by issuing a thirteenth check, distributing all the unused reserve in proportion to monthly amounts withheld.

In the section on the Payment Plan, the methods used in bringing together a summary of patrons' transactions for the month were discussed. The totals of this sheet are set up into one Journal entry which covers the amounts in total

and is posted as such to the General Ledger. The entry takes the following form:

Debit: Milk Purchases
Cream Purchases
Credit: Notes Receivable—Patrons
Accounts Receivable—Patrons
Certificates of Indebtedness
Bacterial Deduction
Hauling Milk
Dumpage
Hauling—Own Trucks
Accounts Payable—Patrons

Supplementing this entry to take care of changes in the capital accounts resulting from this settlement, the following is noted:

Debit: Membership Notes Receivable
Credit: Certificates of Indebtedness Partial Payments (with the amount shown in the preceding transaction as deducted from producers upon their note balances)
and also
Debit: Membership Certificates of Indebtedness Partial Payments
Credit: Membership Certificates of Indebtedness (Memberships paid in full for the month)

It is the intent of the law permitting the establishment of cooperative associations that each producer is to receive for his product the exact difference between its selling price and the expense of manufacture, if any. This means that for every provision which is made for losses, the exact amount of which cannot be ascertained at the time of price determination, the proportionate share should be credited as a reserve to every producer shipping in milk during the period in exact proportion to the milk poundage. When the actual loss has been ascertained, it is applied to this reserve and the balance distributed pro rata to the producers. This is true, also, of all contingency reserves which are to be distributed at the end of the year to the amount of the unused

portion. That is, any surplus which the company actually may have on hand is substantiated by a detailed record with credits to individual producers. This should be done for Reserves for Depreciation and Reserves for Bad Debts, but to carry out such a plan soon would make the work so involved that it is not ordinarily undertaken. The reserve which is made to provide against possible losses and undistributed profits, is, however, of common occurrence. Detailed records are kept and dividends are declared by special payments.

The fixed capital is supplemented from month to month by regular deduction from patrons in proportion to milk shipped; these deductions make up the revolving fund. This amount is gradually refunded to patrons when in the opinion of the board of directors the working capital is sufficient for the needs of the association or when a series matures, if a date has been set. These deductions are shown on the books in series, one account being kept on the General Ledger for each separate year's deduction total. Each account is substantiated by a detailed record of the producers to whom credit has been set up. The retirement of these serial certificates commonly is made by special decision of the board of directors on each series separately so that there usually is no certainty as to a possible time of retirement unless the by-laws set up a definite term. The producer holds a separate certificate for each year's deductions but if they have no maturity date they are of little value in securing loans. They are ordinarily transferable only on the books of the company.

As a matter of accounting theory, it is interesting to consider whether these deductions are more in the nature of loans to the company than capital, since the plan is to retire them eventually and since interest is paid on them regularly. The detailed record of each patron's serial certificates, that is, the certificate yearly total as well as the membership certificates, is handled most easily on a card file on which

the certificate numbers, amounts, interest payments, and so forth, are recorded. The detailed record from month to month is kept on columnar sheets which are cross-footed to find each producer's yearly total and footed downward to prove the month's posting's correctness.

An interesting problem in connection with serial certificates lies in the various methods available for their redemption. Any method that the company can put into effect which will give these certificates a definite maturity date would make it possible for the producer to borrow money upon them; this would be of almost as much advantage to him as to receive the cash, since he is obtaining regular interest on the amount. Such a method would be of great value to the company since it would have the use of the additional capital for a longer period. A plan might be effected by supplementing the first-mortgage bonds (which are usually sold at the outset) at their maturity date by issuing a new series of mortgage bonds to the holders of serial certificates. If such a method were put into effect before the maturity of the original first-mortgage bonds, a series of debentures might be issued for them. This plan could be used only for a short time but would facilitate greatly the financing during the first years when considerable cash is spent for additions and improvements to fixed assets.

Each year the working capital is actually and regularly increased through charges of depreciation as expense, membership fees of new members, serial certificates deductions and possibly the amortization of deferred charges such as Bond Issue Expense or Deferred Organization Expense. The working capital is reduced by purchase of additional fixed assets, payment of bond sinking-fund instalments and retirement of serial certificates in the revolving fund. The working capital necessary is not as large as is required by the usual manufacturing or trading concern since the inventories are low, the turnover rapid, and the control over the working fund unique.

While perhaps it is unwise to encourage that which is subject to legal criticism, or that which is apt to involve the directors in personal liability, a possibility exists of bringing considerable advantage to the association through the payment to producers of higher prices than their milk sales warrant. This results in advantage to all since a larger membership is encouraged and actually brought in; this will absorb a greater volume of overhead burden and make possible the continued payment of a higher price. It is only the recognition of this fact that makes the holding and increase in members possible at the outset.

It is interesting to note the distinctions which exist between the capital account of the association and that of the ordinary corporation. In the former case, a definite plan is provided for refunding the capital since the serial certificates are presumably all to be refunded and the membership certificates are by law refundable in the case the member petitions that this be done at the specified time; with a corporation, the capital usually is not retirable except in special issues of convertible or retirable stock. Further, interest is paid on both types of capital invested by the producer in the association, and this makes his account appear to be more similar to a liability than to capital. The payment of interest to all members on their capital contributions becomes a burden of expense to be borne by active producers on the basis of pounds of milk handled during the period and is in that respect a finer distribution of earnings.

Theoretically, a problem occurs in connection with the distribution of profits arising through the cancelation of memberships and also in a profit which may be made on the purchase by the association of serial certificates below par, after a date has been set for their redemption.

ORGANIZATION OF THE OFFICE

There are so many separate milk products put up in various size containers, the deliveries are of such small amounts,

and to so many separate customers, that to record and control these transactions is no easy task. A great many of the orders are received by telephone during the day for immediate delivery; this makes much additional work. From the standpoint of the farmer membership there is the heavy detail involved of keeping many separate accounts for separate kinds of transactions with each individual producer—such, for instance, as Accounts Receivable, Notes Receivable, Certificates of Indebtedness, Accounts Payable —Patrons, Membership Certificates, Reserve Fund or Surplus Credit, and so forth. It is necessary, also, to have complete memorandum records for ready reference covering such facts as patron number, names, address, number of Certificates of Indebtedness held by him, interest payments, as well as inspection of dairies, and so forth. Then, too, the farmer producers are calling at all hours during the day asking for various information in respect to their accounts or for general information in respect to the association's activities.

The handling of the milk drivers' accounts, keeping proper control of the charges to them, and the fact that cash is received daily in very small lots of currency, makes the work of order clerks, driver account bookkeepers, and the cashiers exceedingly detailed. Ordinarily, there are several classes of trade each of which requires separate treatment and the handling of a separate control in relation to the details of its accounts receivable.

The sales distribution is cumbersome, and even more extensive is the analysis of the commodity sales in respect to quantity, which, to be most effective, must be tabulated two ways; that is, both in respect to driver totals for a period and in respect to daily totals. As before suggested, there is a tendency for orders to come in during the day requiring special delivery on the routes of regular drivers; these are delivered by special drivers commonly known as "short order men" and unless the products are paid for in

cash the charge must be carried through to the regular driver's sheet for the following day and be accepted by him as a proper charge against his route.

This preliminary description is given, not to explain in detail how the office routine is carried on, but to indicate that unless the various parts of the bookkeeping and office system are properly coordinated, the results will be unsatisfactory and inaccurate.

The first and primary patron records are the cards prepared by the receiving room, showing in detail the number of pounds of milk received from each individual producer according to the route on which his milk is collected. This was explained in some detail previously. It was mentioned, also, how the transactions with the patron were brought together and summarized to provide a basis of payment each month; again, how they are used to provide a posting medium of the whole transaction for later General Ledger entry.

The detailed record of notes receivable from producers is important. It is used for two purposes: first, to show the balance which the producer owes on his membership note; second, to show the collateral on the bank loan secured by pledging these individual notes and the amount of the payments to be made each month in reducing the same. The best form of record for this purpose seems to be a columnar one in book form on which the producer's name and number appear at the left of the sheet with 24 columns provided at the right, two for each month in the year. The first column for each month is used for the deduction and the second column to show the resulting balance. It works quite satisfactorily to total these listings separately as to the banks at which the notes are pledged and, in conjunction with these, to make up the total control. There is a list of notes held in the office which have not been pledged for loans. At the time of note renewals, there is considerable confusion due to the fact that some notes are not renewed in time for

pledging immediately and because it is often wise to transfer notes from one bank to another for various reasons. Care should be taken at this time to summarize the totals in each subdivision in accord with the classification the note is brought under for the new year.

The detailed record of the deductions prepared monthly on serial certificates for the revolving fund is made on a form similar to the one explained above except that all the producers are listed in numerical order; also, it is not necessary to show the balance to date except at the close of the year so long as the list of the monthly deductions of the individual producers agrees with the control established by the monthly summary of patron transactions. Reference has been made previously to a card file record showing under each producer the number of his Membership Certificate of Indebtedness, the numbers of and the amounts of his serial certificates, the deduction, the amount, date and check number of interest payment on them. The record for memorandum use showing patron's name, number, certificate numbers, address, and so forth, perhaps is best handled in small loose-leaf books properly indexed.

A review of the method of recording the patrons' complete transactions is as follows: Milk receipts are recorded on cards according to routes by the receiving department which are turned over to the patron transaction clerk. He proves the amount and makes up patron statements for the month on which are recorded the individual milk poundage, butterfat tests, bacterial differential, price per hundredweight, total received for milk and deductions for accounts receivable, membership note, Certificate of Indebtedness deduction, hauling milk and other sundry deductions, leaving the balance to be deposited to the producer's credit in his bank or mailed to him by personal check. The total summary of all these facts is brought together on a monthly summary sheet of patron transactions from which postings are made to the General Ledger, the various controls being herein

GREEN VALLEY MILK PRODUCERS CO-OPERATIVE ASSOCIATION, INC.

DATE _____

NAME _____ No. _____ WHOLESALE ALLOWANCE 3607

	OUT	EX.	RET'D	SOLD	TOTAL	NO	WHLE PRICE	PER UNIT	AMOUNT
MILK BULK									
MILK QTS.									
MILK PTS.									
MILK ½ PTS.									
XXCR									
XXCR									
XXCR									
XCR									
XCR									
XCR									
BUTTERMILK									
CHOC. MILK, ½ PT.									
COT CH., 1 LB.									
COT CH., BULK									
BUTTER, 1 LB.									
				TOTAL PRODUCTS SOLD					
BOTTLES									

REDEEMED AM'T	NO.	TICKETS KIND	BRGT. FOR'D	CHGD.	TOTAL OUT	RET'D	SOLD	PR.
		QUARTS						
		QUARTS, WHLE.						
		PINTS						
		PINTS, WHLE.						
		XXCREAM						
		XXCREAM, WHLE						
		XCREAM						
		BUTTERMILK						

TOTAL SALES

			REC'D TICKETS LISTED HEREON		CASH
		CUSTOMERS ACCTS. REC.		BILLS	
		ROUTE CHARGE	REC'D LOAD IN GOOD ORDER	SIL. DOL.	
		USED TICKETS		HALVES	
				QUARTERS	
		CASH	SHIPPER	DIMES	
		TOTAL		NICKELS	
				PENNIES	

DATE _____

NAME	AMOUNT	F.	NAME	AMOUNT	F	NAME	AMOUNT	F.

Form 92: Retail Driver's Daily Sheet.

established and adjusted for the asset and liability accounts mentioned.

When an association commences operations, it is reasonable to expect that the territory in which it is anticipating to deliver milk at retail, already is covered to a large extent by independent milk peddlers. It is impossible, therefore, for the new company to start out immediately by putting its own drivers on the streets and expect to dispose of its product. Usually, however, satisfactory agreements may be made gradually with these independent drivers to have them purchase their milk products from the association already pasteurized and manufactured, ready for immediate delivery. The association should adopt this method at the outset and, as opportunities present themselves, purchase routes from the independent dealers; and by putting its own drivers in such territories in the city as will infringe only on the rights of foreign drivers, gradually build up company routes. The ultimate goal is, of course, to make all deliveries through company drivers, as only then can the company's sales policies be put into effect fully.

In the bookkeeping system one must consider, then, as a matter of local delivery, three types of sales transactions: The company driver, the independent dealer, and the wholesale customer (restaurants, schools, stores, bakeries, and so forth).

The company driver makes out a requisition each day for the product which he wishes prepared for him to take out, two days in advance for delivery. This requisition is copied in ink by the order clerk on the regular statement form for company drivers made in duplicate, showing the commodities taken out, the commodities returned, and the net amount to be accounted for. Space is provided to indicate how the balance due is accounted for—either by cash turned in, tickets redeemed turned in, or balance of charges which the driver has made on his route book to various customers whom he supplies. This Driver's Sheet, with the

GREEN VALLEY MILK PRODUCERS CO-OPERATIVE ASSOCIATION. INC.
(INDEPENDENT DEALERS)

P 2613

DATE

NAME

		QUANTITY OUT	QUANTITY RETURNED	SOLD	UNIT PRICE	TOTALS		TOTAL SALES
LOOSE MILK	QTS.							
BOTTLED MILK	QTS.							
BOTTLED MILK	PTS.							
BOTTLED MILK	HALF PTS.							
XX LOOSE	QTS.							
XX CREAM	QTS.							
XX CREAM	PTS.							
XX CREAM	½ PTS.							
X LOOSE	QTS.							
X CREAM	QTS.							
X CREAM	PTS							
X CREAM	½ PTS.							
% CREAM	QTS.							
BUTTER-MILK	QTS.							
CHOCOLATE MILK	QTS							
CHOCOLATE MILK	PTS.							
CHOCOLATE MILK	HALF PINTS							
BOTTLES								
SKIM MILK	QTS.							
COTTAGE CHEESE	1 LB.							
COTTAGE CHEESE	BULK							
BUTTER	PRINT							
BUTTER	BULK							

		ACCT'S REC.	QTS.		SALES	
		ROUTE CHG.	PTS.		TICKET SALES	
		TICKETS USED	CRM		TOTAL	
		CASH				
		TOTAL				

RECEIVED ABOVE IN GOOD ORDER

Form 93: Independent Dealer's Daily Sheet.

products requisitioned filled in, goes to the shipper in duplicate and early the following morning the driver secures the products and signs for them on his sheet. He is given the duplicate copy, and the original is returned to the cashier by the shipper. The cashier holds the sheet until the driver returns with his cash, redeemed tickets, Route Book, and credit memorandum for products returned to the plant. These are turned in to the cashier and the result posted to the sheet and brought down to the final balance chargeable to the driver representing specific charges made in the Route Book. The driver is charged, also, and given daily a memorandum of all short orders which were delivered on his route the previous day. These he can verify, if he pleases, before accepting the charge, but the total charge is passed through and entry made in the driver's account each day.

The company itself does not keep a detailed record of the charges he has entered in his Route Book against his individual customers, but the book is inspected daily by the clerk in charge of these accounts and statements are sent out regularly for all balances which appear to be in arrears. The total of the balances in the Route Book is verified each week by totaling the balances that stand against the driver's customers. If a discrepancy exists between the total of these balances and the total of the driver's account, the amount is deducted from his salary unless a satisfactory explanation can be given. The company employs a staff of route riders or inspectors who supervise the company's drivers; these continually go over the various routes with the drivers and confirm with each customer the correctness of the balances as shown in the Route Book. Further, to facilitate this checking, the daily driver must take a vacation at least once in two weeks, when the route inspector delivers the milk himself and thoroughly checks up each customer's balance. This supervision over the accounts usually results in a low loss from bad debts and but little disturbance from customers in demanding adjustment.

GREEN VALLEY MILK PRODUCERS CO-OPERATIVE ASSOCIATION, INC.

DATE WHOLESALE DRIVERS M 1204

No. NAME

		LOADS OUT				RET'D	SOLD	VALUE
		1	2	3	TOTAL			
LOOSE MILK	QTS.							
BOTTLED MILK	QTS.							
BOTTLED MILK	PTS.							
BOTTLED MILK	HALF PINTS							
XX LOOSE	QTS.							
XX CREAM	QTS.							
XX CREAM	PTS.							
XX CREAM	HALF PINTS							
X LOOSE	QTS.							
X CREAM	QTS.							
X CREAM	PTS.							
X CREAM	HALF PINTS							
% CREAM	QTS.							
BUTTER-MILK	QTS							
CHOCOLATE MILK	QTS							
CHOCOLATE MILK	PTS.							
CHOCOLATE MILK	HALF PINTS							
BOTTLES								
SKIM MILK	QTS.							
COTTAGE CHEESE	1 LB.							
COTTAGE CHEESE	BULK							
BUTTER	PRINTS							
BUTTER	BULK							
CANS								

		CHARGE ACCTS REC			TOTAL	
		CASH	PAD NO.			CREDIT MEMO. NOS.
			PAD NO.			
		TOTAL				

SIGNATURE

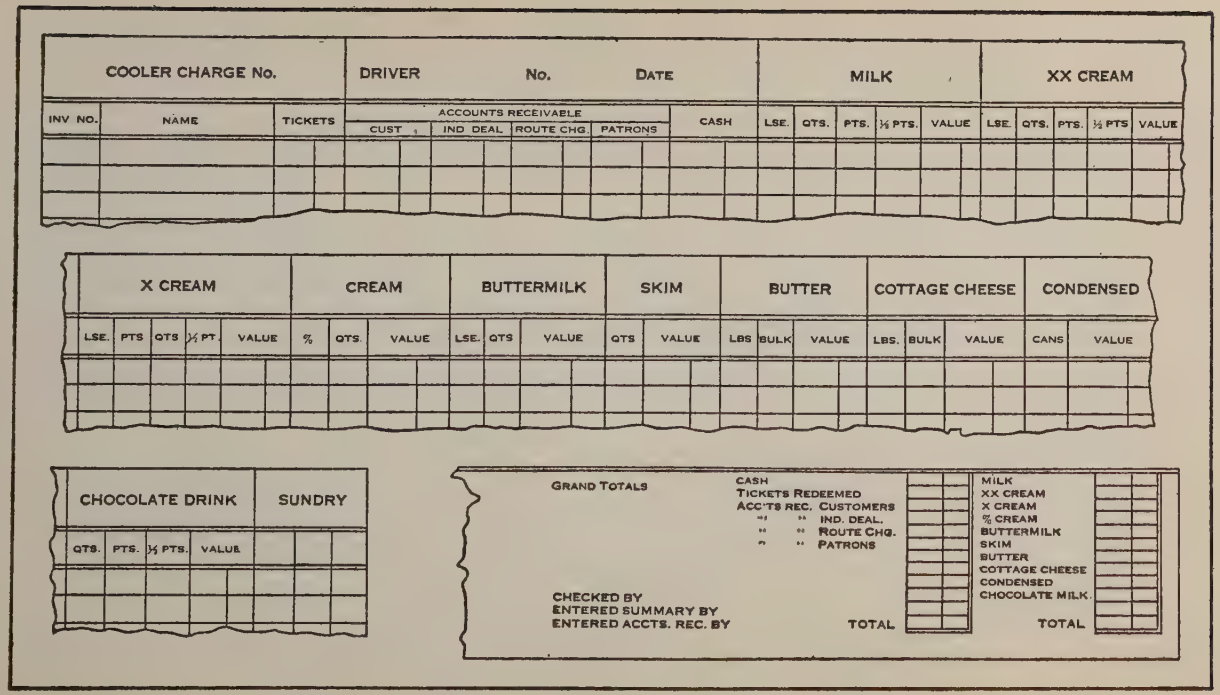
Form 94: Wholesale Driver's Sheet.

Form by which wholesale driver's daily activities are controlled and according to which he is held accountable for settlement. See page 498 for form on which the analysis and final segregation of charges emanating from this sheet are prepared for the books.

The daily requisition or order form for the independent dealer is similar to that used for company drivers except for minor differences in the information shown; and, of course, the size, color, and shape of the Driver's Sheet are different so that it may be distinguished readily from the others. The sheet is handled by the shipper and cashier in almost identically the same manner as for a company driver, except that in practically every case the independent dealer is expected to pay cash each day for the total amount of his load, experience having proved that as soon as such a dealer is allowed to get behind in his payments, the company eventually loses a considerable amount in the collection of the account. When the account is settled in full each day, the transaction is treated entirely as a cash sale and no entry is necessary in the accounts receivable for independent dealers.

All types of usual delivery described above are made by horse and wagon, because with many stops great use can be made of the intelligence of a horse in following the same route each day. The wholesale drivers and short-order men usually are one and the same. They use automobile trucks almost entirely, in the morning delivering to the wholesale customers (restaurants, bakeries, stores, candy shops, and so forth), and during the rest of the day being kept busy in delivering telephone short orders to all sections of the city. A file is kept by the order clerk or telephone operator of the requirements of the various wholesale customers for each day in the week, these being subject to change only by customer confirmation.

Each wholesale order is placed on a common order form, then turned over to the shipper who makes up the wholesale drivers' loads; he enters on a statement form similar to that used by the company drivers, except that it is of different color, the amount of the load which is chargeable to each wholesale driver. The wholesale driver may take out several such loads each day and on some of these there may be included the short orders referred to previously, the order

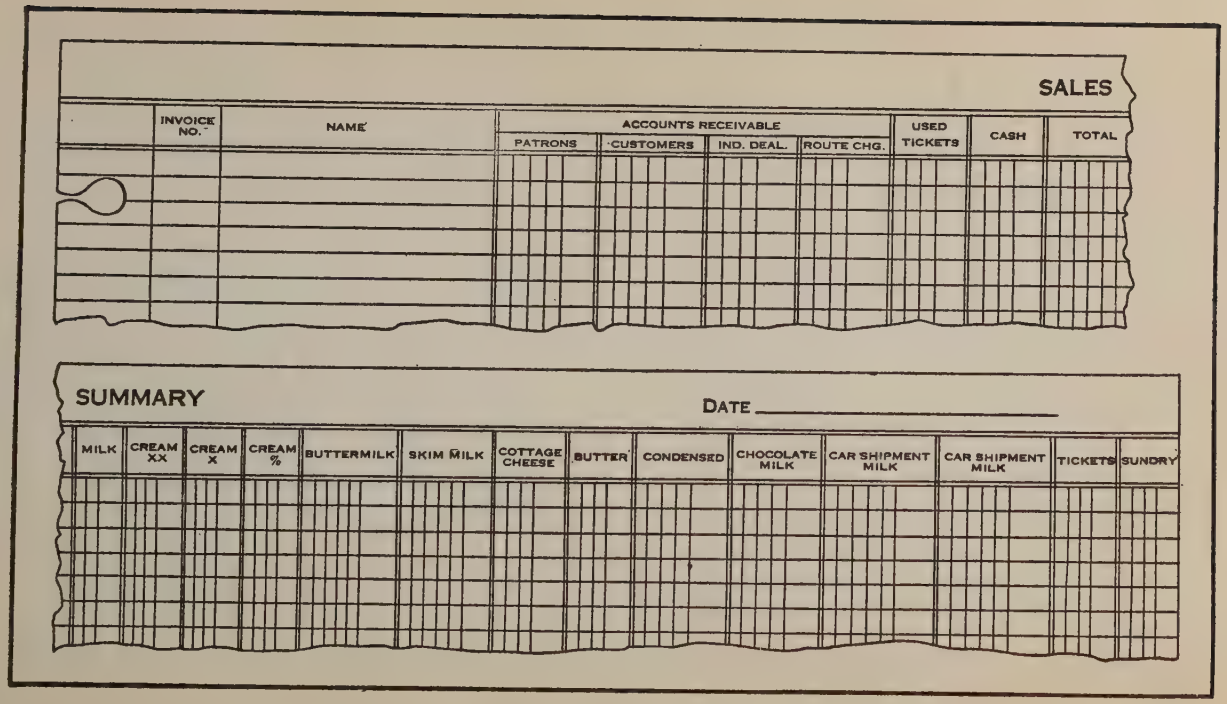


Form 95: Wholesale Driver's Daily Deliveries Analysis Sheet.

Form used in analyzing each wholesale driver's deliveries for the day, allocating the charges to proper channels and summarizing for the book-keeping records and commodity sheet. (Daily Sales Record).

for which has been received by telephone and transmitted to the shipper in the same way as for wholesale customers. The shipper or the superintendent of wholesale deliveries is responsible for the efficiency and judgment displayed in assembling and delivering these wholesale and short orders. The originals of the wholesale Drivers' Sheets are transmitted direct to the office and the driver himself secures a Charge Slip of the company signed for by the customer for whom delivery is made or if the sale is for cash the amount is turned in to the cashier along with the charge slips which must account completely for all the product delivered by him.

The checking of these wholesale drivers' deliveries for a day involves considerable detail and is done by a clerk who has no other duties. He assembles a large sheet each day, analyzing each separate delivery and distributing the amount of commodity delivered and its sales value, making an analysis of the charge according to the class of Ledgers to which postings are made. That is, the final summary of the sheet discloses the total charges to be made from each wholesale driver's deliveries, to customers' accounts, independent dealers' accounts, drivers' accounts or cash; the sales distribution relates to quantity and value of products sold. The sheet summarizes, also, the exact means by which the driver accounted for his load, which, of course, must balance against the total charges. The completion of this sheet proves out the driver's work for the day, furnishes a basis of entry to the Daily Commodity Sheet of quantities delivered, to the Daily Sales Summary of values of product delivered, and ties up with the cashier's statement of cash receipts for the day. Similar to the above is a sheet turned in each day by the shipper accounting for all cash sales or dock deliveries made to various patrons of the association or customers calling there for products during the day; this sheet, also, is summarized by the same clerk as before mentioned.



Form 96: Sales Summary.

Controlling receivable ledger and classifying sales. Ties in with Cash Receivables Sheet, (General Ledger posting medium). Totals from various drivers sheets are distributed hereon.

All products shipped out of the plant in carload or part carload lots are charged to Customers' Accounts Receivable from a copy of the order and Bill of Lading sent upstairs by the shipper; shipments are confirmed by office communications and records as to the correctness of the order and amounts shipped.

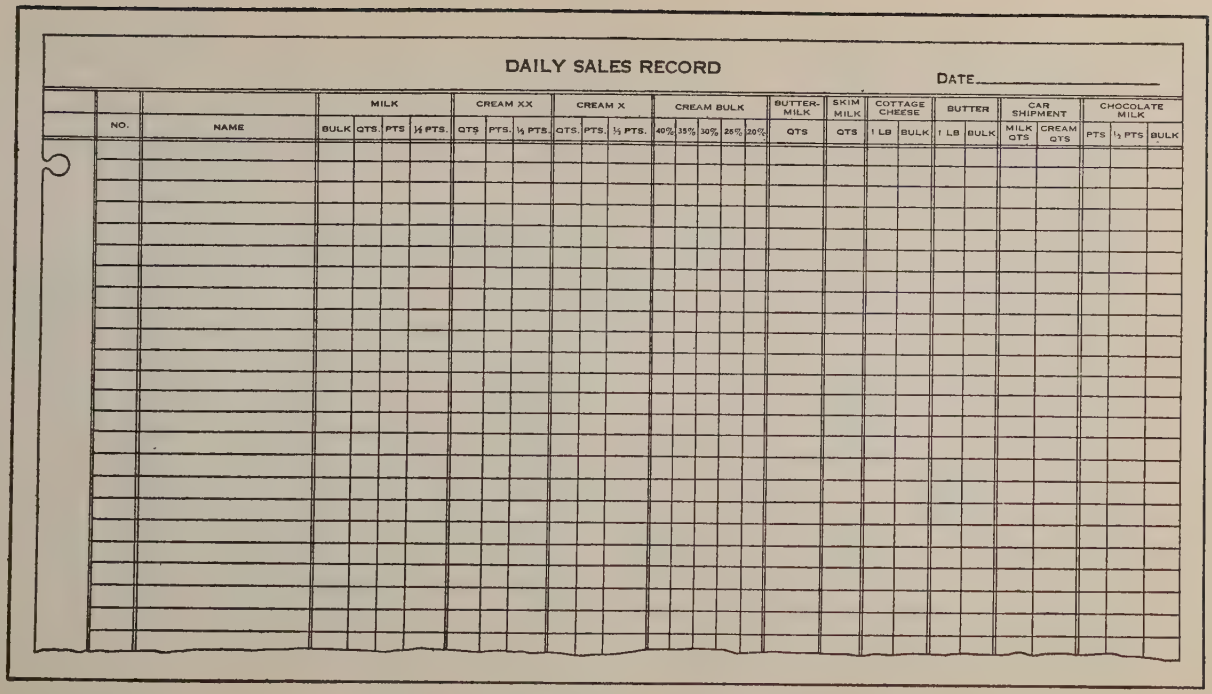
The Sales Summary is assembled each day by one of the clerks from the various classes of Drivers' Sheets, wholesale sheets, and direct shipment sheets. This record becomes a posting medium for the General Ledger; it has a column at the extreme left for the drivers' names, this being followed by accounts receivable control columns for Accounts Receivable Ledgers as follows:

Patrons
Customers
Independent dealers
Route charges

In addition to the above, there are columns for debit totals, for tickets redeemed and for cash; and to facilitate balancing the sheet, there is found a total column for all debits. The credit sales columns which balance with this total are as follows:

Milk
Cream
Buttermilk
Skim milk
Cottage cheese
Butter
Condensed milk
Chocolate milk
Tickets sold
Sundry

In cases where it has been found advisable to make charges for short orders of the previous day direct to the following day's Driver's Sheet, which is done in order to eliminate any quibbling by the driver later on over the correctness of the charge, it is necessary to supplement the



DAILY SALES RECORD

DATE_____

NO.	NAME	MILK				CREAM XX			CREAM X			CREAM BULK					BUTTER-MILK	SKIM MILK	COTTAGE CHEESE		BUTTER		CAR SHIPMENT		CHOCOLATE MILK		
		BULK	QTS.	PTS	½ PTS.	QTS	PTS.	½ PTS.	QTS.	PTS.	½ PTS.	40%	35%	30%	25%	20%	QTS	QTS	1 LB	BULK	1 LB	BULK	MILK QTS	CREAM QTS	PTS	½ PTS	BULK

Form 97: Daily Sales Record (Commodity Sheet).

Form on which analysis is made, for product quantities are sold by days, by periods of day, and classes of trade, that is, retail, wholesale, independent dealer, or car shipment, also for accumulating sales by days on drivers' routes.

regular Driver's Sheets by a Summary of Short Orders covering postings to the day's sheets from previous day's deliveries. This summary is substantiated by a memorandum of these short order charges which are given the various drivers.

This Summary of Short Orders posted must be treated in the Sales Summary and Commodity Sheet for the following day as a deduction, since the corresponding amounts are already totaled into the Drivers' Sheets but were actually delivered from the cooler on the previous day and reported as part of the sales and commodities delivered through the reports of the short order men. If this is not done, the sales and reported commodities sold by quantities would include these amounts twice. Since the quantities taken out as reported through sales are used in checking the cooler, this requirement is made more essential.

The Commodity Sheet already has been referred to and reference has been made to analysis of quantities of products sold. These amounts are drawn off in detail from all of the Drivers' Sheets and Direct Shipment Reports according to the time when delivery was made from the cooler; that is, its totals are used in checking up the two or three men who are in charge of the cooler daily as to whether or not they have accounted for all of the products placed in their charge. Subtotals also are drawn down on company driver shipments, independent dealers, and wholesale deliveries. It is advisable, if the sales department is educated to its use, to keep an accumulative record by days and months of deliveries on each route as a test of drivers' efficiency.

The customer balances from the Driver's Route Book, entered up daily by the company driver, are transferred monthly to an entirely new book. This is done, first, because it is cumbersome for the driver to refer to a book readily in which more than one sheet is included for each customer (each account in the book representing 31 days in the month

with separate columns for each commodity handled). Further, there is always a possibility that the driver will lose the book; in the method described, the record will be complete in the office at least up until the beginning of the current month. At the time of transferring these balances a cross-reference is made to the page number to which the account is forwarded in the new book. The old book is left with the clerk in charge from which he makes a detailed statement for mailing direct to the customers on the balances which are not up-to-date or those for which the agreement is that an account shall be rendered monthly.

In case it is the plan of the company to reward the driver for his diligence through the payment of a commission on the various quantities of commodities sold, or if he is to be penalized for his failure to make proper collections, it has been found to work out well to carry his Ledger account in some such manner as follows: His account is posted to a large columnar Ledger sheet which provides, in addition to the total debit and credit columns, an analysis of the debits taken from his Daily Sheets in separate columns showing the total value of each type of commodity sold which makes up the total charge. The credits are subdivided in columns to represent cash sales, ticket sales, and cash received on account. In this manner, by scanning the account it is easy to determine just what the driver is doing from day to day on his route. By totaling the detail columns at the end of the week, separate totals are had on separate commodities for figuring commission and the receipts on account total is available either for paying a commission if favorable, or for penalizing the driver if unfavorable. Also, in going over the Ledger sheet with the driver, an excellent opportunity presents itself for discussing his delivery problems.

The question of how to control the return of milk bottles to the plant causes considerable trouble. They may be charged to the driver at a nominal amount and credited to

him for the same amount upon their return; in this case, any loss of bottles is borne by the driver. The charge is considered a deposit rather than a sale. However, since the amount of deposit usually is less than the bottles are worth, the tendency exists for the bottles to go elsewhere; and when legal action is brought, the courts are prone to consider that a sale actually was effected when the driver was charged for the bottles. It probably works out better to keep a memorandum record only of bottles taken out and returned by the driver. Then, if the number of bottles returned is above a certain fixed percentage of those taken out, the driver is not penalized. If below this amount, a small charge per bottle is made against him sufficient in amount to encourage the return of all bottles. Although some bottles always are broken or never returned by the housewife, this method does not burden the careful driver by such a loss.

Since it is not possible for the drivers to determine in advance just how much they are going to deliver, some milk products are always returned. These are received again into the plant and the driver is given a credit memorandum signed by the receiver of the goods returned. This he turns in to the cashier so as to receive credit for the amount. A Commodity Sheet of Returns is prepared similar to the one previously mentioned which is of value in gauging the judgment of the driver in placing his Requisitions and in keeping the returns as low as possible. It is not usually the policy to put these products on the routes a second time and their value when manufactured into butter and cottage cheese is considerably less than in their original form; besides, the labor and expense of bottling and handling have been wasted.

A proper control over the products going into and shipped out of the cooler is important; an enormous loss will result from stolen or uncharged-for goods if this precaution is not taken. The result may be accomplished by taking physical inventory at least twice daily, when the day shipper comes on and again when he is relieved. In comparing these

amounts with the shipments out, as recorded on the Commodity Sheet, and with the receipts of all goods from the plant, as recorded on signed receipts turned in by the various plant departments and the duplicates turned in by the cooler and shipper men themselves, the tie-up is effected. All the Drivers' Sheets are initialed by the shipper in charge so that they are classified easily as to day-shipper or night-shipper; also, a set of Commodity Sheet subtotals is brought down to represent all quantities shipped out in these two respective periods. Briefly stated, the tie-up is brought about then by bringing together this information by periods on the tie-up sheet; each shipper's overage or shortage then may be determined quickly.

The cashier receives and has to account for a considerable quantity of currency and milk tickets; these are summarized in the Cash Receipts Record which daily must balance with the Sales Summary for the day. The cashier's office is active from early in the morning until the early part of the evening, as the milk drivers come and go at irregular times. This usually necessitates more than one cashier. It seems to be a typical trait of milk companies to have a large number of small bills paid for through the cashier's petty cash fund, these disbursements for small amounts frequently exceeding one or two hundred dollars a day; this adds considerably to the cashier's work. The actual proof and tie-up made by the cashier is as follows: On the Cash Receipts Sheet (there being one for each day) is recorded by name the total cash received from each driver or person, the total being entered in the Cash column; a credit column is provided for each class of accounts receivable and other credit columns are used for such items as driver's notes, interest, and sundries (or a General Ledger credit). One additional credit column is provided marked "Summary"; in this column is entered the total of sales paid for in cash. This total must agree with the Cash column (debit) on the Sales Summary Sheet for the corresponding day, the offsetting credits

of which are merged in the sales distribution recorded on the Sales Summary. In posting to the General Ledger, the two mediums must be taken in conjunction, the debit Cash column in the Sales Summary and the Summary column in the Cash Receipts Record, both being omitted in posting. This provides an internal check, since all the Drivers' Sheets are checked by a clerk after they are figured by the cashier. This clerk checks the correctness not only of the extensions but of the unit prices as well. The quantities shown on the sheet are used by another clerk in making up the Commodity Sheet for the day which, in turn, must tie up with the cooler inventory, thus indicating that the quantities as shown on the sheet have not been manipulated by the cashier. Further, a third clerk takes the sheet and prepares the Sales Summary which, as has been shown, must tie in with the cash receipts reported by the cashier. This method of internal check seems advisable inasmuch as the cashier has access to the receipts in currency covering practically all of the products sold.

The duties of the bookkeeper of route charges (company drivers' accounts) have been described. The remaining accounts receivable usually can be handled by one clerk and their recording is adaptable to the use of a bookkeeping machine. Separate Ledgers and General Ledger controls are kept on Independent Dealers, Patrons, and Customers (which ordinarily is composed of wholesale accounts, direct shipments, and employees).

It is essential that the telephone operator be accurate, patient and courteous, as well as have the ability to handle calls rapidly and efficiently. She is the first company representative involved when a customer calls in and the impression made by her is representative of the company's policy. The short orders for the day are taken by the operator, if possible, and, if not, the call is relayed to an order clerk. The order is transmitted at once by a carrier system if one is used or, at any rate, as quickly as possible, so that

the shipper may make up his loads most advantageously.

The method used in handling the deliveries by the wholesale drivers and the short-order men has been described. It is well that all the Drivers' Sheets be carefully rechecked since so many computations involved on each one and since so many control accounts are affected; it is necessary that the work be done correctly so that when the control is established, rechecking will be at a minimum. The experience with this type of organization has been that if the sources of original entry are not recorded accurately in the first instance, the further detail involved may be doubled or trebled, with an unsatisfactory condition still existing through having to recheck in locating errors.

It is the duty of the office manager to supervise all office activities so far described and the purely accounting activities to be described later. If the size of the business does not warrant having a credit and collection manager, this work usually must be done by the office manager with the assistance of a clerk. The credits and collections are of considerable importance in respect to independent dealers' accounts and wholesale customers. The collection of accounts for railroad shipments to the larger centers and the passing of credits on these customers usually is assumed to a large extent by the milk brokers who handle these sales.

The keeping of the General Ledger, the assembly of totals from the various books of original entry, the making of Journal entries, the Expense Distribution and the Accounts Payable records, are handled by a bookkeeper and one or two assistants. The Sales Summary, Cash Receipts Record, Cooler Tie-up, Commodity Sheet, and so forth, come to the bookkeeper's desk daily, and their agreement with each other is verified. Any discrepancies are brought to the attention of the office manager and taken care of by him.

In describing the financial records, it is not necessary to delineate on the features which are similar to those used by all corporations, such as the Cash Disbursements Records,

Check Book, Notes Payable Records, Voucher Records, and so forth. Experience shows that the number of Journal entries for a cooperative milk marketing organization is largely due to special transactions affecting patrons' accounts and the contrast between receivables and payables. As the accounts receivable bookkeeper is not usually proficient enough in General Ledger work to trace down entries to the receivable accounts through the daily sources of entry to the controls, it is often expedient to handle all debits and credits to accounts receivable, through a Clearance Account in the General Ledger, so that the clearance may be made in each case by Journal entry with which the accounts receivable bookkeeper becomes familiar.

The great number of separate and distinct departments and functions of the complete organization make necessary the classification of expenses into a large number of accounts. Hence, it has proved practicable to distribute in the Voucher Record to such expense control columns as represent the various functional groups of the organization, such as:

Productive Departments
Production Overhead
Delivery
Selling
Administrative
Outside Stations
General Ledger

This localization makes the posting of the General Ledger as well as the pulling of a Trial Balance much easier. The detail of the accounts under each control may be determined by reference to the statements outlined later.

PLANT OPERATION—RECORDS AND CONTROL

The plan here outlined for plant records, control, and cost determination is that applicable to a single plant which bottles milk and cream and manufactures butter, cottage

cheese, condensed milk, chocolate drink, and buttermilk and which ships pasteurized milk in canned lots to other cities. Essentially, the same plan would be used in a smaller plant carrying on less of these operations, by a larger plant with some additional departments, or by an association having several plants doing these functions. In the last case, the plant records and control would be determined for each individual plant, after which all would be assembled into one complete Operating Statement for the entire organization.

The primary purpose of a report or record of plant operations is to trace the product from the receiving room in its liquid state through the various departments, accounting for the total milk received through the determination of yields in the various departments and establishing a standard percentage of plant loss in the various operations. Milk, being a liquid, presents many obstacles in the determination of its correct volume. It is easy for a pipe or container to leak or for a can or tank to overflow, with the result that such milk runs into the sewer and is lost. The fact that the milk is in continual motion through several operations presents a further handicap in that, if there is no rest period, it is difficult to measure the volume.

The real constituent of milk which is of value is butterfat, and in some of the processes of manufacture, it is quite necessary to take a butterfat test of the finished product and then determine in connection with the total amount of the finished volume that all the butterfat has been accounted for. Butterfat content, theoretically, is the only proper basis for determining that all the value has been accounted for in a salable product. The loss of a few quarts of cream each day would pay for the services of a high-caliber cost man or production clerk to determine the percentages of loss and devise means of correcting such loss. With the high-grade butterfat-testing machines found in an up-to-date plant, it is an easy matter to determine the butterfat contents of any milk product; in a great many cases this is

absolutely necessary. So, if these tests are not made, it is merely because the information has not been assembled.

Due to the sanitary requirements in handling milk products, no meter has as yet been devised which can be used to measure the flow of the liquid through a pipe. This would be the most accurate method, but since it cannot be done it is possible to measure the milk only at its fixed rest periods. This usually works out as follows: Upon the receipt of milk the weight is determined, because upon this amount the producer's pay is based. The volume can be computed easily from the weights. The next rest period usually is in the milk pasteurizers, providing the vat-type with the steam coils are used. The milk flows in until a certain height is reached in the pasteurizers; since it remains there for quite a time, the volume can be measured easily. Up until this time the milk has been flowing into storage tanks through one pipe and out through another continuously and from there through the clarifier or filter, through the preheater and into the pasteurizers.

From the pasteurizers the milk may go to any one of several departments. It may go to the bottling room, in which case the exact amount of milk bottled is determined by the number of bottles. It may go to another department for drawing off into cans for shipment to other cities or to wholesale customers. The exact volume in this case can be determined. It may go through the separators, after which the cream will pass through the cream pasteurizers and finally be drawn off in cans, at which point its volume will be measured. The skim milk, however, usually cannot be measured at this time because in all probability it is conducted through pipes to various parts of the plant. A portion of it is emptied into vats for the manufacture of cottage cheese, and at this point the contents of the vat may be measured by a meter stick before the cottage cheese is made; the amount used will be accounted for by the number of pounds of cheese manufactured. Some of the skim milk

will be drawn into a large tank for the manufacture of buttermilk, at which point it may be measured. Likewise, if a chocolate drink is manufactured, the amount of skim milk used for this purpose may be determined. If skim milk is used with return cream, butter or other high percentage butterfat products for the manufacture of condensed milk, or if condensed skim milk is being manufactured, the skim milk probably will be conducted through sanitary pipes direct from the separators and cannot be measured until it has been emptied into the hot wells where the preheating process for condensing occurs. Any remaining skim milk is canned for sale to bakeries and restaurants to as great an extent as the market will bear. At any rate, by this time, the total amount of skim milk resulting from the separation process has been determined and from these figures one may arrive at the total volume which has resulted after the pasteurization, separation and bottling processes have been completed, so that the plant loss on whole milk may be determined at this point. When this is figured each day under proper care, a minimum standard of plant loss is soon arrived at so that if the loss exceeds this amount the matter may be investigated to determine where exists the carelessness or inefficiency.

It has been explained how the volume of skim milk used in manufacture is calculated at the outset of its manufacturing operation. The products resulting therefrom are determined accurately and a standard or normal yield computed so that each day the efficiency of these productive processes may be gauged. Some whole milk usually is conducted direct from the storage tanks or pasteurizers to the condensery where its volume is determined. The cream may be used for butter if a surplus is available; some is bottled immediately either in its original consistency or, after standardizing, to a thinner consistency; again, it may be placed in cold storage to be held until its market value will be greater. In actual practice, the milk which is to be sepa-

rated does not ordinarily pass through the milk pasteurizers because all products resulting from the separation usually go through a similar process of heating before they are finished.

The product returned from the routes daily is not ordinarily returned to the cooler to be shipped out again unless it be butter or cottage cheese which usually can be reshipped for at least two days in succession before losing its quality. The milk and cream returned are dumped from the bottles and returned to production, the cream being held up sometimes for three or four days until enough has accumulated to churn. The milk is separated, and the cream resulting, likewise, is used for butter.

The purposes of determining volumes passing through the various departments are three: first, to establish a basis for arriving at the amount, if any, of an abnormal plant loss on milk; second, to establish the normal yield of each manufacturing department of product resulting from a fixed volume of milk, cream or skim, to be manufactured; third, to determine the actual volume passing through each of the processes so that the cost per unit for each month may be approximated. It is seen that great value is attached to a master production report of a whole plant, by which the quantities of milk are traced through production and the yields shown—particularly to the manager and plant superintendent; also, such a report to the sales manager shows to what extent his requisitions for products have been lived up to by the production superintendent. The value of determining approximate unit costs of production for comparison with previous months and for arriving at the total cost of a finished product is readily seen for price-setting and cost comparisons.

The use of a regular process cost does not appear to be practicable for the cooperative association. The cost of the milk itself does not depend upon a purchase price, since its cost to the association is the amount of its distributable

earnings which may vary greatly from that established by market conditions and competitive buying. Furthermore, the volume of milk is legally uncontrollable, the supply being what actually is shipped in rather than what a purchasing department might buy. Again, it is a difficult matter to establish what is the actual material cost of skim milk or cream, so that the material cost in products manufactured therefrom is best determined by reference to the skim milk and cream market price at the time. But the amount does not become part of the cost accounts and any unit computation is of memorandum character only.

For practical purposes of comparison, the direct expenses of labor, supplies, and maintenance of the productive departments really are the only items which are controllable or which fluctuate with the volume manufactured. This is true because of the uncontrollable volume of milk which the company must handle.

The tendency is for the production overhead of the plant to remain near a constant amount rather than one which fluctuates to any great extent with seasonal change in volume of milk. It is impossible, therefore, to control the burden of overhead per unit of product manufactured or to attempt to modify selling prices from month to month on the basis of what is the total unit cost of production. As a possible means of controlling the overhead which is not of a fixed charge nature, a comparison with previous months' totals is of great value, particularly a comparison with the corresponding month of the previous year.

To obtain results strictly in accordance with scientific cost accounting procedure, it would be necessary to obtain a basis of proration of the various overhead items. It would be possible probably to find a proper basis for distributing to the production departments such overhead items as power and refrigeration, superintendence, janitor and cleaning, laboratory, and to a lesser degree of accuracy, other sundry expenses and fixed charges; this is taken up later. It is

the opinion of the writer that, particularly due to the uncontrollable nature of the volume produced, to distribute these items regularly through the books or for regular monthly cost statements would be so inaccurate as to be probably misleading and entirely impracticable.

It does seem possible, however, at various periods to compute the total direct cost of processing the unit of salable products in some such method as follows: First, determine the departmental production cost per unit by dividing the expense of the productive departments through which the product has passed by the total number of units of product passing through these respective departments as indicated by a Monthly Summary of the Daily Production Reports. An accumulation of the total direct unit departmental costs of all the productive departments involved in a completed unit gives the controllable cost entering into the product.

The value of the material in the completed article seems to be best determined by referring to the market value of the milk constituent in the product. The matter of overhead to be distributed seems best determined by finding the relation of the total annual plant overhead to the total annual number of units of products manufactured by arbitrarily assuming, say, that a bottle of milk, a pound of butter, a pound of cottage cheese, and a gallon of canned product bear the same overhead burden.

The whole matter of how far the cost system or cost determination shall be carried depends on the opinion of the acccountant in charge as to how dependable are his production reports, how accurate or how misleading an attempted overhead proration would be, and of still greater importance, how capable the management is in interpreting a Cost Statement or acting upon it once it has been compiled. It is seen that unit cost in a productive department is an essential cost factor and the assembly of all productive departmental costs to the various finished products is entirely reliable, but, as stated before, the matter of overhead proration is

unsatisfactory from many angles, and it is believed that this should be done only in making special cost analyses. A sample of a completed Production Report with a month's summary is found later; this is discussed as to the calculation of unit production cost and an assembly of these costs to the finished product.

An additional justification for not attempting an extensive determination of cost and overhead distribution is the fact that market prices for the product are determined in the great majority of cases by competition or "what the traffic will bear" rather than as to what is the cost of production. For a cooperative association, the cost of production should include the farmer's cost of production as well as the manufacturing cost; this, of course, cannot be ascertained.

The amount of attention given to the control of manufacturing supplies and the question as to whether or not the stock-room with perpetual inventory records shall be maintained, depends upon the size of the organization and the willingness of the management to conform to standard practice. A careful check on the supplies should be had and much care should be taken in the use of Purchase Orders, Receiving Reports, and so forth. If a stock-room is not maintained where the cost of all supplies used for the month can be collected, it is necessary to take accurate physical inventories monthly or use an average consumption of supplies per unit of milk handled. These amounts should be checked up by actual inventory at least quarterly.

The laboratory activities are to make tests for bacteria daily on the product manufactured, to check up the plant's sanitation, to make tests of bottled milk on the wagons of the drivers, to make butterfat tests for yield determination of manufactured products, to make bacterial starters for buttermilk and butter manufacture and more particularly to keep a complete record of each producer's monthly butterfat tests and bacteria count. The laboratory supplies

much valuable information to the plant superintendent. It keeps many records on the items enumerated above, but since they have no direct bearing on the accounting, they are given no further attention.

The outside stations are maintained (and the tendency is to increase them) as a means of absorbing overhead and administrative burden as well as to secure greater confidence from the membership and a stronger and larger body of producers to work together toward a common purpose. It has been an outstanding feature in the success of the larger associations that they could secure working capital by deduction and absorb overhead by the pooling process from producers whose milk in a great many cases went direct to the consumer. The cooperative, in this case, performs only a marketing function. The milk from the outside stations here described, however, for the most part passes through the main plant. The direct station cost of each outside plant or station is segregated through the General Ledger classification to a controlling expense account and in this way the unit cost per hundredweight of handling the milk through the station is determined. An interesting cost comparison may be made as to the increase in total unit overhead to be borne by all producers as the result of a station's individual expenses as compared with the decrease in total plant overhead caused by the absorption of such overhead by the station's own volume of milk. The result in practically every case more than justifies the existence of the station.

Previously, an outline was given as to how the inventory is tied up daily with the amount of products passing in and out of the cooler. A form is provided by which each department's foreman must sign a requisition for everything which goes from the cooler back into production, and likewise a cooler foreman must receipt a slip for all products received from production during the day. There is a report demanded on a regular form from the foreman in each of

the productive departments each day showing just what milk or partially manufactured product he received and just how much was manufactured from it and receipted for by the cooler foreman. Duplicates of these receipted slips are turned in by these production foremen which must check with the original copies turned in by the cooler.

DISTRIBUTION CONTROL AND RECORDS

The matter of dollars-and-cents value which emanates from the Drivers' Sheets and becomes part of the various customers' and drivers' accounts is of bookkeeping interest only. The assembly of the Daily Commodity Sheets by daily product totals and by monthly route or drivers' totals is an important record for the sales and delivery manager. In this way, he can size up the routes accurately, locate the weak spots and gage the production requirements. The Commodity Sheet Record of returns is important in checking up the drivers on their accuracy in requisitioning their loads.

It has been found advisable in the case of cooperative associations conducting retail routes to make periodic tests of each individual route's earning power by segregating the sales for the period made by that route and allocating to the route as expense the driver's wages, the prorata expense of stable, wagon repairs, horseshoeing, depreciation of wagons, horses, and so forth, and to distribute other delivery expenses to the routes on as equitable a basis as possible. It should be the accountant's duty to see that this analysis is made and as a consequence a rerouting and reclassification of the drivers' routes often results.

The management of the drivers requires a peculiar type of man, as drivers are inclined to be a rough bunch of fellows who often are thoroughly familiar with the ways of taking advantage of the company, so that if a strong hand is not kept over them, the company's losses through uncollectible accounts and misappropriated goods may be ex-

treme. Some of the common methods of defalcation by drivers which have come to the writer's attention are illustrated as follows:

1. Losing the route book, or claiming that it is lost and collecting some of the accounts personally as the result of the confusion in making up a new book;
2. Overcharging customers on quantity and withholding the cash;
3. Turning in false charges and uncollectible accounts to the office for collection and receiving full credit for the same;
4. Tickets not reported as sold making an unaccountable route shortage.

The sales and delivery departments make use of many records which have but little accounting significance, such as solicitors' records, complaint records, garage and barn reports, gas and oil requisitions, and so forth.

STATEMENTS AND OPERATING STATISTICS

Due to the nature of its organization, it seems advisable not to grant to employees too great access to all books of the company. Assume, therefore, that all regular operating transactions are handled through the General Ledger and that tying in with it is a Private Ledger in which inactive asset and liability accounts with their particular income and expense accruals are kept. The General Ledger is kept by the regular accounting and bookkeeping clerks under the supervision of the company controller, auditor, or office manager, as the case may be. The Private Ledger, having relatively few transactions, is kept by the accountant, auditor, or office manager himself and held under lock and key by him. Then, for use of the chief accounting officers of the company, but accessible only to them or to the board of directors, is what may be called the Controller Ledger. In this Ledger are brought together, in summary accounts, all income and expense from the other two books where these are adjusted to arrive at the fair distributable earnings for

the period which then are closed out. This Ledger controls the other two Ledgers, but is not controlled by them, and its existence may be unknown to the regular accounting departments.

The Trial Balances at September 30, 1924, of the General Ledger and Private Ledger of the Green Valley Milk Producers Cooperative Association, Incorporated, after regular adjustments for accruals, proratings, inventories, and so forth, are shown on the following pages. The first month of the fiscal year is taken, to simplify the explanation. The company is a cooperative association of the type which has been discussed, with a finance plan of serial certificate deductions of 10 cents per hundredweight and membership of $300, payable by note.

GENERAL LEDGER TRIAL BALANCE, SEPTEMBER 30, 1924

	Debit	Credit
Cash—Bank	$ 5,000.00	
Petty Cash	500.00	
Accounts Receivable—Customers	45,000.00	
Accounts Receivable—Indep. Dealers	6,000.00	
Accounts Receivable—Patrons	1,500.00	
Accounts Receivable—Drivers' Routes	10,000.00	
Hauling Patrons' Milk	4,800.00	
Notes Receivable—Trade	2,500.00	
Notes Receivable—Patrons	57,048.35	
Supplies Inventory	17,500.00	
Plant and Equipment	625,400.00	
Insurance Unexpired	3,000.00	
Prepaid Expense Sundry	2,001.85	
Accounts Payable—Trade		$ 38,000.00
Accounts Payable—Patrons	500.00	
Notes Payable		50,000.00
Tickets Unredeemed		1,300.00
Surety Bonds—Drivers		2,000.00
Taxes Accrued		2,500.00
Membership Certificates of Indebtedness		150,000.00
Membership Certificates of Indebtedness Partial Payments		32,951.65
Membership Notes Receivable		57,048.35
Interest Accrued C. of I. Membership		5,800.00
Interest Accrued Notes Payable		700.00
C. of I. by Deduction—Series "4"		22,600.00
Milk Sales—Car Shipment		32,600.00
Milk Sales—Local		47,400.00
Cream Sales—Car Shipment		2,100.00
Cream Sales—Local		15,900.00
Butter Sales		3,000.00
Cottage Cheese Sales		1,800.00
Buttermilk Sales		500.00
Skim Milk Sales		600.00
Condensed Milk Sales		5,500.00
Chocolate Milk Sales		900.00
Milk Purchases—Patrons		
Production Department Control	6,810.80	
Production Overhead Control	6,640.00	
Delivery Expense Control	10,642.00	
Selling Expense Control	2,400.00	
Administration Expense Control	2,010.00	
Outside Stations Control	3,630.00	
Interest Membership C. of I.	750.00	
Interest Notes Payable	300.00	
Membership Promotion	410.00	
Interest and Discount Earned		10.00
Dumpage Charge—Income		
Bad Debts Collected		50.00
Miscellaneous Income		40.00
Private Ledger		255,723.00
Reserve for Depreciation		85,320.00
	$814,343.00	$814,343.00

PRIVATE LEDGER TRIAL BALANCE, SEPTEMBER 30, 1924

	Debit	Credit
Investments	$ 12,000.00	
Sinking Fund Bonds	50,000.00	
Interest Receivable	300.00	
Cash—Inactive	13,119.00	
Product Inventory	6,000.00	
Milk Routes Purchased	5,000.00	
Bond Issue Expense—Deferred	8,000.00	
Cash—Special	1,500.00	
First Mortgage Bonds Authorized		$250,000.00
Increase or Decrease Product Inventory	1,350.00	
Interest Earned on Investments		60.00
Interest on Bonds	1,000.00	
Interest on Serial Certificates	504.00	
Interest Accrued Bonds		3,000.00
Bond Issue Expense	176.00	
Certificates of Indebtedness—Series 1		25,650.00
Certificates of Indebtedness—Series 2		32,420.00
Certificates of Indebtedness—Series 3		42,730.00
Interest Accrued C. of I.—Series 1		384.75
Interest Accrued C. of I.—Series 2		486.30
Interest Accrued C. of I.—Series 3		640.95
Administrative Salaries and Expense	700.00	
General Ledger	255,723.00	
	$355,372.00	$355,372.00

Milk received—2,580,000 pounds
Average Butterfat Test—3.7526%

The accuracy of the above Trial Balances having been verified, the accountant prepares to determine what should be the correct and fair distributable price to the patrons. The Profit and Loss accounts and the accountability for the month's increase in assets by the General and Private Ledgers are brought on the Controller's Books through the following entries, which facts are adjusted to reflect the true conditions by successive entries:

ADJUSTMENT ENTRIES TO CLOSE GENERAL AND PRIVATE LEDGERS INTO CONTROLLER'S LEDGER

	Debit	Credit
Productive Labor	$ 3,821.00	
Productive Supplies	2,650.00	
Production Maintenance	239.80	
Production Overhead	6,640.00	
Outside Stations	3,630.00	
Delivery Expense	10,642.00	
Selling Expense	2,400.00	
Administrative Expense	2,010.00	
Income Charges	1,460.00	
General Ledger (Increase of Net		
General Ledger Assets)	76,907.20	
Sales		$110,300.00
Other Income		100.00
To bring General Ledger Record of September Operations on the Controller's Ledger:		
Decrease Product Inventory	1,350.00	
Income Charges	1,680.00	
Administrative Expense	700.00	
Other Income		60.00
Private Ledger (Increase of Net Private Ledger Liabilities)		3,670.00
To bring Private Ledger Record of September Operations on the Controller's Ledger:		
Production Overhead	263.00	
Delivery Expense	205.00	
Reserve for Deferred Maintenance		468.00
To prorate fairly repair costs to month as below:		

MONTHLY REPAIR COSTS PRORATED

Item	Experience Shows Monthly Burden Approximates	Actual Expense Month
Power and Refrigeration Maintenance	$ 96.78	$ 22.00
Building Repairs	533.22	345.00
	$630.00	$367.00
	367.00	
Increase Month's Expense	$263.00	
Repairs Wagons and Harnesses	$333.33	$215.00
Truck Repairs	566.67	480.00
	$900.00	$695.00
	695.00	
Increase Month's Expense	$205.00	

ADJUSTMENT ENTRIES TO CLOSE EXPENSE ACCOUNTS

	Debit	Credit
Losses of Unforeseen Determination	$1,290.00	
Reserve for Unforeseen Losses		$1,290.00
5 cents per hundredweight held in reserve to patrons' credit.		
Reserve for Plant Overhead Adjustment	523.80	
Reserve for Administrative Expense Adjustment	526.66	
Reserve for Income Charge Adjustment	607.90	
Plant Overhead		523.80
Administrative Expense		526.66
Income Charges		607.90
Adjustment of September's Overhead in respect to uncontrollable factors to basis of annual milk receipts, experience showing that milk receipts for September equal 6.72% of year's total and that actual expenses for September in prior years have borne a percentage relation to year's total as follows:		
Plant Overhead 7.26%		
Administrative Expense 8.33%		
Income Charges 8.33%		
(The explanation for the theory of this entry was taken up in the first pages of Chapter V.)		

The facts are now assembled for the price determination. The net excess of income accounts over expense accounts follows:

Distributable Income per Books		$73,137.56
Add Dumpage Charge (Income not yet on books but determined on patron summary)		280.00
Add Hauling—Own Trucks (Income similar to above)		240.00
Add Bacterial Deduction (Net deduction as shown by patron summary on account high bacterial counts)		530.00
		$74,187.56
$74,187.56 ÷ 2,580,000 lbs =	$2.8754	
Average Test 3.7526% − .7526 × (say $0.05 per point) =	.3763	
Price to pay for 3% butterfat	$2.4991	

The price for 3% milk having been determined, the individual patrons' accounts are computed; this results in the following General Ledger entry:

GENERAL LEDGER ENTRIES—RESULT OF COMPUTING PATRONS' ACCOUNTS

	Debit	Credit
Milk Purchases	$74,187.56	
Milk Purchases—Bacterial Deduction		$ 530.00
Notes Receivable—Patrons		2,362.90
Accounts Receivable—Patrons		1,200.00
Serial Certificate Deduction		2,580.00
Hauling Milk		4,800.00
Hauling—Own Trucks		240.00
Dumpage		280.00
Accounts Payable—Patrons		62,194.66
Summary of Patrons' Statement for September.		
Membership Notes Receivable	2,362.90	
Membership Certificates of Indebtedness Partial Payments		3,362.90
Reduction of membership notes by deduction of September—see preceding entry.		
Membership Certificates of Indebtedness Partial Payments	1,500.00	
Membership Certificates of Indebtedness.		1,500.00
Membership notes fully paid by September deduction. Certificates issued under date of settlement for September milk.		

The following closing entries then are made in the Journal for the Controller's Books, which close all income and expense into Distributable Earnings account. This account next is closed out to General Ledger for actual distribution to patrons, the remaining balance in the General Ledger account being the excess or shortage, as the case may be, of the month's increase in General Ledger assets distributed. This balance, along with all Reserves left unclosed in the Controller's Ledger, are presumed to close out automatically by the end of the fiscal year:

JOURNAL CLOSING ENTRIES

	Debit	Credit
General Ledger	$ 520.00	
Other Income		$ 520.00
To set up income realized through patron transactions.		
Sales	110,300.00	
Other Income	680.00	
Decrease Product Inventory		1,350.00
Productive Labor		3,821.00
Productive Supplies		2,650.00
Production Maintenance		239.80
Production Overhead		6,379.20
Outside Stations		3,630.00
Delivery Expense		10,847.00
Selling Expense		2,400.00
Administrative Expense		2,183.34
Income Charges		2,532.10
Losses Unforeseen		1,290.00
Distributable Earnings		73,657.56
To close		

DISTRIBUTABLE EARNINGS ACCOUNT CLOSING ENTRY

	Debit	Credit
Distributable Earnings	$73,657.56	
General Ledger		$73,657.56
To close and credit General Ledger with amount of its increased assets distributed.		

The post closing Trial Balance in the Controller's Ledger is shown below. The General Ledger and Private Ledger are not closed until the end of the fiscal year.

POST CLOSING TRIAL BALANCE CONTROLLER'S LEDGER
SEPTEMBER 30, 1924

	Debit	Credit
Reserve for Deferred Maintenance		$ 468.00
Reserve for Plant Overhead Adjustment	$ 523.80	
Reserve for Administrative Expense Adjustment	526.66	
Reserve for Income Charge Adjustment	607.90	
Private Ledger		3,670.00
General Ledger	3,769.64	
Reserve for Unforeseen Losses		1,290.00
	$5,428.00	$5,428.00

The statements for the month now may be prepared and are shown as follows:

Exhibit "A"	—	Statement of Assets and Liabilities
Exhibit "B"	—	Statement of Operations
Schedule "B-1"	—	Statement of Cost of Production Departments
Schedule "B-2"	—	Statement of Production Overhead
Schedule "B-3"	—	Statement of Outside Station Expense
Schedule "B-4"	—	Statement of Delivery Expense
Schedule "B-5"	—	Statement of Selling Expense
Schedule "B-6"	—	Statement of Administrative and Office Expense
Exhibit "C"	—	Summary of Monthly Production

As previously mentioned, there are many obstacles to an accurate and dependable cost analysis resulting in actual costs per unit of completed product rather than comparative operating results. Also, in arriving at the unit costs, many arbitrary and indefinite bases must be taken which make the result indefinite and probably rather misleading when taken in connection with the various factors mentioned previously. Typical arbitrary assumptions are: (1) Basis for distribution of plant overhead to productive departments; (2) Whether cottage cheese, butter, skim milk, buttermilk, chocolate milk, and so forth, are to be treated as by-products and to have cost accumulated on them from the time they become by-products or to have them considered as regular products; (3) Whether, if they are considered as by-products, they should be burdened with plant overhead; (4) What material costs should be used on main products and by-products; (5) Whether plant losses of products are to be considered in connection with production costs; (6) How units of bottled milk in various sizes, cans of milk, bulk and pound packages of cheese, butter, and so forth, are to be considered in arriving at the cooler cost.

However, the accountant should be in a position to give advice and be informed as to costs as suggested below:

1. To arrive at the approximate costs of manufacturing products; that is, by occasional test calculations to determine the approximate cost per unit of finished product;

2. Comparison of outside plant unit costs with overhead reduction per unit;

3. Analysis of routes as to their profitableness and the approximate cost of a unit delivery and percentage of route expense to sales;

Briefly the following methods of procedure are suggested which arrive at results well worth the effort of special analysis:

1. In arriving at the approximate unit costs of manufacturing, the first task is overhead proration to the productive departments. This probably may be done best as follows:

(*a*) Power and Refrigeration (prorated also to unproductive overhead departments of Power and Refrigeration, Office and Laboratory) on composite fixed basis set by meter tests of power used and temperature tests of steam and heat used (time also as an element).

(*b*) Laboratory—Fixed percentage basis found by representative record of time consumed in each department's work.

(*c*) Janitor and Cleaning, Building Repairs, Sundry Plant Burden (Light, Storage, and so forth), and Taxes are prorated on the basis of relative floor space used, being also distributed to Power and Refrigeration, Office and Laboratory.

(*d*) Superintendence is prorated on the basis of productive labor cost in the productive departments as well as in the Power and Refrigeration Department and Laboratory.

(*e*) Depreciation and Taxes are computed on the basis of departmental investments in all productive departments (and Power and Refrigeration and Laboratory)—Building and Equipment depreciation being prorated to the others including Office on the basis of the relative investments in the departments.

(*f*) The adjustment of the month's Overhead Burden to the Reserve for Plant Overhead is made on the basis of the total of the other prorations.

(*g*) The prorations to Power and Refrigeration and Power and Laboratory are then redistributed to the productive departments in the same ratio that the original expense of these overhead departments was prorated to productive departments.

The net result of the above calculations is to charge to each processing or productive department (a small amount being also prorated to Office Expense) its proper expense or overhead so that all expense is absorbed by productive units. By reference to the Summary of Daily Production Reports, such as illustrated by Exhibit "C," on page 541, the number of units processed by each department may be determined and so the unit cost in each department figured. The total cost of a finished product is then found by totaling the individual units of cost in its production. A detailed study of cost-finding for a milk-manufacturing plant would be largely of theoretical value and is so extensive a subject as to be out of place in this discussion.

An interesting and valuable comparison may be had in computing the cost of each outside station per hundredweight of milk handled through it as compared with the total reduction in the plant overhead burden per hundredweight because of the increased milk poundage from it. The comparison of the unit station costs one month with another and one plant with another is also very valuable.

In the analysis of the retail routes the best plan seems to be to separate by actual analysis or close estimation the delivery expenses applicable to each route. The labor cost is actual, the stable and wagon expenses can be very closely approximated and the miscellaneous delivery expense accurately prorated to arrive at close-to-actual expense for each route. This is compared with the number of units delivered to find the unit costs of delivery, the percentage of expense to route sales and the profitableness of the routes. The result is that often routes are combined or eliminated to get greater efficiency. The summaries for each route of com-

modities sold prepared daily and monthly provide very reliable guides as to a route's tendency.

The analysis of wholesale or auto deliveries is more for the purpose of determining the efficiency of the truck and driver than for determination of unit cost of delivery. As in the case of wagons, the expense of each truck is determined, the depreciation, repairs, and gas and oil being segregated by the office as to separate cars. Mileage reports are turned in to the delivery superintendent and the use of a patent device known as a "Servis" register has been found valuable for indicating the hours of actual operation of each truck per day. These facts taken with the deliveries made are of some value.

The financial condition of any concern is judged by its Balance Sheet. The tendency of the cooperative is to be undercapitalized as a result of unwise or improper financial plans at the outset.

The secret of a sound financial condition would seem to be the use of the following formula, which is variable in all its factors; policies governing financial progress should be determined easily with reference to a presupposed necessary plant investment and probable milk receipts (source unknown):

where $d = abc$
$a =$ regular deduction per hundredweight of milk
$b =$ term of revolving fund deduction
$c =$ pounds of milk per year
$d =$ balance fixed property account plus unamortized organization or bond issue expenses.

With reference to the accounting set-up of the Balance Sheet, the plan of segregation of capital account and current account has considerable merit in that it makes possible a closer scrutiny of the relation of fixed investment to membership capital.

In the statements following, there have been omitted, for reasons previously made, unit cost statistics. An

analysis of sales as to quantities sold and the amounts of wholesale, retail, independent dealer, and car shipment sales for the various products, is customary. A detailed analysis of the sales as to drivers' routes is also made. These analyses, as well as that of tying up products manufactured through the cooler tie-ups to the actual sales, because of their details irrelevant to the accounting principles, have been omitted purposely.

GREEN VALLEY MILK PRODUCERS COOPERATIVE ASSOCIATION, INC.

EXHIBIT "A"

Statement of Assets and Liabilities—September 30, 1924

ASSETS

Cash		$ 20,119.00
Notes and Accounts Receivable		
Accounts Receivable		
Customers	$ 45,000.00	
Independent Dealers	6,000.00	
Patrons and Employees	300.00	
Drivers' Route Charges	10,000.00	
Total Accounts Receivable	$ 61,300.00	
Notes Receivable		
Trade	$ 2,500.00	
Patrons	54,685.45	
Total Notes Receivable	$ 57,185.45	
Total Notes and Accounts Receivable		118,485.45
Inventories		
Product	$ 6,000.00	
Supplies	17,500.00	
Total Inventories		23,500.00
Investments and Interest Receivable Thereon		12,300.00
Total Current Assets		$174,404.45
Plant and Equipment	$625,400.00	
Less Reserve for Depreciation	85,320.00	
		540,080.00
Milk Routes Purchased		5,000.00
Deferred Charges		
Bond Issue Expense—Unamortized	$ 8,000.00	
Insurance Unexpired	3,000.00	
Sundry Expense—Prepaid	2,001.85	
Total Deferred Charges		13,001.85
Total Assets		$732,486.30

LIABILITIES

Notes and Accounts Payable		
Notes Payable		
Bank Secured by Patrons' Notes Pledged	$ 43,231.64	
Trade	6,768.36	
Total Notes Payable	$ 50,000.00	
Accounts Payable		
Trade	$ 38,000.00	
Patrons' Cash Distribution September Milk	61,694.66	
Total Accounts Payable	$ 99,694.66	
Total Notes and Accounts Payable		$149,694.66
Other Liabilities		
Accrued Interest and Taxes	$ 13,512.00	
Tickets Unredeemed	1,300.00	
Surety Bonds	2,000.00	
Third Sinking-Fund Instalment on Bonds	25,000.00	
Total Other Liabilities		41,812.00
Total Current Liabilities		$191,506.66
Fixed Liability		
First-Mortgage Bond Authorized	$250,000.00	
Less Sinking Fund	50,000.00	
	$200,000.00	
Less Third Instalment Above	25,000.00	
Total Fixed Liability		175,000.00
Total Liabilities		$366,506.66
Reserves		
Reserve for Deferred Maintenance	$ 468.00	
Reserve for Production Overhead Adjustment	523.80*	
Reserve for Administrative Expense Adjustment	526.66*	
Reserve for Income Charge Adjustment	607.90*	
Reserve for Unforeseen Losses (Credited to Patrons)	1,290.00	
Total Reserves		99.64
Capital		
Membership		
Certificates of Indebtedness	$151,500.00	
Partial Payments of Membership Certificates	33,814.55	
Membership Notes Receivable	54,685.45	
Total Membership Capital	$240,000.00	

*Debit Balance.

Certificates of Indebtedness by Deduction		
Series 1—Dated 1-1-22, Due 1-1-28..	$ 25,650.00	
Series 2—Dated 1-1-23, Maturity Unknown.....	32,420.00	
Series 3—Dated 1-1-24, Maturity Unknown.....	42,730.00	
Series 4—(Uncompleted).....	25,180.00	
Total Revolving Fund Capital.....	$125,980.00	
Total Capital.....		$365,980.00
		$732,486.30

Green Valley Milk Producers Cooperative Association, Inc.

Exhibit "B"

Statement of Operations—Month of September, 1924

			Per Qt.	Per Cwt.
Sales				
Milk Local	$ 47,400.00			
Milk Car Shipment	32,600.00			
Cream Local	15,900.00			
Cream Car Shipment	2,100.00			
Butter	3,000.00			
Condensed Milk	5,500.00			
Cottage Cheese	1,800.00			
Buttermilk	500.00			
Skim Milk	600,00			
Chocolate Milk	000.00			
Total Sales	$110,300.00			
Less Decrease Product Inventory	1,350.00			
Total Gross Revenue		$108,950.00	$0.0907	$4.22
Cost of Manufacture				
Productive Labor (Schedule "B-1")	$ 3,821.00		$0.0032	$0.15
Productive Supplies (Schedule "B-1")	2,650.00		.0022	.10
Productive Maintenance (Schedule "B-1")	239.80		.0002	.01
Productive Overhead (Schedule "B-2")	6,379.20		.0054	.25
Outside Station Expense (Schedule "B-3")	3,630.00		.0030	.14
Total Production Cost		16,720.00	$0.0140	$0.65
Gross Manufacturing Earnings		$ 92,230.00	$0.0767	$3.57
Operating Expense				
Delivery (Schedule "B-4")	$ 10,847.00		$0.0090	$0.42
Selling (Schedule "B-5")	2,400.00		.0022	.10
Administrative (Schedule "B-6")	2,183.34		.0017	.08
Total Operating Expense		15,430.34	$0.0129	$0.60
Net Operating Earnings		$ 76,799.66	$0.0638	$2.97
Less Income Charges				
Interest				
Membership Certificates of Indebtedness	$ 750.00			
Serial Certificates	504.00			
Bonds	1,000.00			
Notes Payable	300.00			
Bond Issue Expense	176.00			
Total Interest	$ 2,730.00			
Membership Promotion	410.00			
Unforeseen Losses	1,290.00			
Total Income Charges	$ 4,430.00			
Less Adjustment This Month's Burden	607.90			
Total Income Charges		3,822.10	.0032	.15
		$ 72,977.56	$0.0606	$2.82
Add Other Income				
Interest and Discounts Earned	$ 70.00			
Dumpage Charge	280.00			
Bad Debts Collected	50.00			
Miscellaneous Income	40.00			
Hauling—Own Trucks	240.00			
Total Other Income		680.00	.0007	.03
Net Distributable Earnings		$ 73,657.56	$0.0613	$2.85

2,580,000 lbs. Milk-Average Test 3.7526%.

Green Valley Milk Producers Cooperative Association, Inc.

Schedule "B-1"

Statement of Cost of Production Departments
Month of September, 1924

Item	Labor	Supplies	Maintenance	Total
Receiving Room	$ 420.00	$ 20.00	$ 32.80	$ 472.80
Pasteurizing Milk	170.00	10.00	40.00	220.00
Separator	105.00	4.80	18.00	127.80
Pasteurizing Cream	230.00	3.20	65.50	298.70
Bottling	610.00	1,420.00	10.00	2,040.00
Bottle-Wash	360.00	8.00	9.00	377.00
Can-Wash	110.00	60.00	15.00	185.00
Butter Manufacture	160.00	194.00	9.00	363.00
Cheese Manufacture	72.00	240.00	11.00	323.00
Condensing	210.00	10.60	4.60	225.20
Buttermilk	40.00	5.80	7.00	52.80
Chocolate Milk	30.00	182.40	6.00	218.40
Car Shipment	271.00	5.20	1.50	277.70
Cooler and Shipping	1,033.00	486.00	10.40	1,529.40
Total Cost (Exhibit "B")	$3,821.00	$2,650.00	$239.80	$6,710.80

GREEN VALLEY MILK PRODUCERS COOPERATIVE ASSOCIATION, INC.

SCHEDULE "B-2"

Statement of Production Overhead
Month of September, 1924

Power and Refrigeration		
Labor	$ 600.00	
Coal	1,043.00	
Water	240.00	
Power Supplies	85.00	
Refrigeration Supplies	35.00	
Electric Power	380.00	
Maintenance (Actual)	22.00	
Total Power and Refrigeration		$2,405.00
Laboratory		
Labor	$ 460.00	
Supplies and Expense	60.00	
Total Laboratory		520.00
Janitor and Cleaning		
Labor	$ 150.00	
Supplies	30.00	
Laundry	100.00	
Total Janitor and Cleaning		280.00
Superintendence		350.00
Building Repairs		
Repairs and Alterations—Building	$ 170.00	
Repairs Building Equipment	25.00	
Conveyer Maintenance	150.00	
Total Building Repairs (Actual)		345.00
Sundry Plant Burden		
Light	$ 200.00	
Storage—Outside	110.00	
Miscellaneous Plant Expense	120.00	
Total Sundry Plant Burden		430.00
Fixed Charges—Plant		
Depreciation	$1,550.00	
Insurance	210.00	
Taxes	550.00	
Total Fixed Charges—Plant		2,310.00
Total Plant Overhead (Actual)		$6,640.00
Add Adjustment of Maintenance Deferred		263.00
		$6,903.00
Less Adjustment this Month's Burden		523.80
Total Production Overhead (Exhibit "B")		$6,379.20

Green Valley Milk Producers Cooperative Association, Inc.

Schedule "B-3"

Statement of Outside Station Expense
Month of September, 1924

Item	Total	Station A	Station B	Station C	Station D
Labor	$1,200.00	$320.00	$300.00	$ 360.00	$220.00
Supplies	180.00	50.00	40.00	60.00	30.00
Ice	240.00	80.00	60.00	90.00	10.00
Insurance	120.00	20.00	30.00	40.00	30.00
Taxes	150.00	30.00	40.00	50.00	30.00
Depreciation	490.00	120.00	110.00	150.00	110.00
Repairs	120.00	25.00	40.00	35.00	20.00
Trucking	600.00	140.00	150.00	180.00	130.00
Coal	530.00	150.00	120.00	130.00	130.00
Power and Light	6.00	1.50	1.40	2.60	.50
Miscellaneous	194.00	24.00	60.00	50.00	60.00
Total	$3,830.00	$960.50	$951.40	$1,147.60	$770.50
Cwt. Milk	14,160	4,400	3,100	4,640	2,020
Station Cost per Cwt	$ 0.2705	$0.2184	$0.3069	$ 0.2473	$0.3814

GREEN VALLEY MILK PRODUCERS COOPERATIVE ASSOCIATION, INC.

SCHEDULE "B-4"

Statement of Delivery Expense
Month of September, 1924

Horse Delivery		
Drivers' Wages	$4,010.00	
Depreciation Horses	$ 120.00	
Depreciation Wagons and Harnesses	$ 162.00	
Repairs Wagons and Harnesses	$ 215.00	
Stable Expense		
Stable Wages	$ 542.00	
Feed and Bedding	740.00	
Horseshoeing	265.00	
Veterinary	10.00	
Barn Rent	160.00	
Stable Miscellaneous	11.00	
Total Stable Expense	$1,728.00	
Total Horse Delivery		$ 6,235.00
Auto Delivery		
Chauffeurs' Wages	$1,350.00	
Depreciation Trucks	241.00	
Gas and Oil	275.00	
Repairs Trucks	480.00	
Auto Licenses	22.00	
Total Auto Delivery		2,368.00
Car Shipment		
Loading	$ 25.00	
Icing	98.00	
Trucking	140.00	
Total Car Shipment		263.00
Miscellaneous Delivery		
Delivery Foreman	$ 364.00	
Delivery Supplies	193.00	
Insurance Delivery	362.00	
Trucking	196.00	
Ice	288.00	
Freight and Expense	32.00	
Returns Expense	106.00	
Bottle Inspection	225.00	
General Delivery Expense	10.00	
Total Miscellaneous Delivery		1,776.00
Total Actual Delivery Expense		$10,642.00
Add Adjustment for Maintenance Deferred		205.00
Total Delivery Expense (Exhibit "B")		$10,847.00

GREEN VALLEY MILK PRODUCERS COOPERATIVE ASSOCIATION, INC.

SCHEDULE "B-5"

Statement of Selling Expense
Month of September, 1924

Advertising and Sales Promotion		
Advertising	$240.00	
Donations	30.00	
Commissions—New Customers	50.00	
Selling Expense—Miscellaneous	100.00	
Exhibits and Demonstrations	35.00	
Total Advertising and Sales Promotion		$ 455.00
Sales Organization Expense		
Sales Manager's Salary	$330.00	
Salesmen's and Solicitors' Salaries	520.00	
Gas and Oil—Sales Cars	31.00	
Repairs—Sales Cars	25.00	
Depreciation—Sales Cars	16.00	
Total Sales Organization Expense		922.00
Car Shipment Sales Expense		
Broker's Commissions	$610.00	
Special Inspection	150.00	
Trade Association Dues	82.00	
Sales Promotion—Car Shipments	15.00	
Total Car Shipment Sales Expense		857.00
Sales Stationery, Collections, and so forth		
Sales Stationery	$ 33.00	
Ticket Cost	16.00	
Collection Expense	12.00	
Order Clerk	75.00	
Bottle Allowance	28.00	
Stolen Milk	2.00	
Total Sales Stationery, Collections, and so forth		166.00
Total Selling Expense (Exhibit "B")		$2,400.00

GREEN VALLEY MILK PRODUCERS COOPERATIVE ASSOCIATION, INC.

SCHEDULE "B-6"

Statement of Administrative and Office Expense
Month of September, 1924

Executive		
Executive Salaries	$700.00	
Executive Meetings	80.00	
Legal Fees	110.00	
Accounting	100.00	
Company Dairy Inspection	210.00	
Auto Expense—Administrative	28.00	
Total Executive Expense		$1,228.00
Office Expense		
Office Salaries	$990.00	
Stationery Office	260.00	
Postage	67.00	
Telephone and Telegraph	101.00	
Insurance—Office	16.00	
Depreciation—Office	25.00	
Office Expense General	22.00	
Total Office Expense		1,482.00
Total Actual Administrative and Office Expense		$2,710.00
Less Adjustment This Month's Burden		526.66
Net Administrative and Office Expense (Exhibit "B")		$2,183.34

Green Valley Milk Producers Cooperative Association, Inc.

Exhibit "C"

Summary of Plant Production—Month of September, 1924

Milk—Quarts

Received	
Patrons (Aver. test 3.75%)	1,200,000
Cooler Milk Returned	9,600
Returns from Routes	12,600
Held Over Previous Month	12,080
Total Milk Received	1,234,280
Disposed of	
Bottled	
325,800 qts.	325,800
162,600 pts.	81,300
34,800 half-pts.	8,700
	415.800
Bulk	
Car Shipments	326,000
Cooler	69,150
Cottage Cheese	1,500
Separated	324,390
Condensed	72,000
Standardized Cream	2,040
Chocolate Milk	1,740
Held Over to Next Month	13,600
Plant Loss—Milk 0.65%	8,060
Total Disposed of	1,234,280

Cream 40%—Quarts

Received	
Separator xx	33,860
Returns xx	2,400
Returns x (2,000)	1,000
Total Received	37,260
Disposed of	
Bottled xx	
4,020 qts.	4,020
420 pts.	210
18,200 half-pts.	4,550
Bottled x	
2,180 qts. (Milk for standardizing 2040 qts)	1,590
212 pts. (Milk for standardizing 2040 qts)	53
3,064 half-pts. (Milk for standardizing 2040 qts)	383
xx Cream to Cooler	6,600
xx to Butter; 6,660 lbs.	13,875
Car Shipment	3,000
Plant Loss 7.9%	2,979
Total Cream Disposed of	37,260

Skim Milk—Quarts

Received Separator	290,530
Disposed of	
Buttermilk Manufactured	
Bottled 6,000 qts.	
Bulk 1,200 qts.	7,200
Bulk to Cooler	26,800
Cottage Cheese	52,000
Chocolate Milk	5,960
Plant Loss 68.3%*	198,570
Total Disposed of	290,530

Chocolate Milk—Quarts

Received	
Milk	1,740
Skim	5,960
Laboratory Syrups, etc.	640
Total Received	8,340
Bottled	
800 qts.	800
8,600 pts.	4,300
12,200 half-pts.	3,050
Plant Loss 0.22%	190
Total Disposed of	8,340

Condensed Milk

Received (quarts milk)	72,000
Produced (616 cans)	24,640
Yield 2.922	

Cottage Cheese

Received	
Milk—Whole	1,500
Milk—Skim	52,000
Total Fluid	53,500

Cheese Made	Pounds
1 lb. Containers	10,600
2 lb. Containers	2,040
5 lb. Containers	2,060
Bulk	5,300
Total Pounds	20,000
Yield 14.95 lbs. per can	

Butter

Butterfat Cream Churned	
13,875 qts. at 40%	5,550 lbs.
Butter Manufactured	6,660 lbs.
Percentage Overrun 20%	

*A loss typical of cooperatives because cream purchases cannot be made outside.

Problems

(*a*) Prepare in outline form the salient features of the contents of this chapter.

(*b*) Prepare rulings for all forms required by the organization described in this chapter; utilize those which are illustrated. Having done this, prepare a system chart showing the relations of the various forms and records to each other.

(*c*) Prepare a chart of accounts for a small-town creamery privately owned. Indicate the functions of the various cost controls; also, show the cost unit you would recommend, and why.

(*d*) David and E. Foley formed a partnership about a year ago to carry on a jewelry business. They sell jewelry, silverware, phonographs and records, souvenirs, bric-a-brac, and so forth, on the instalment plan, each such sale being on the basis of $1 down and $1 a week. Likewise, they sell on the regular retail cash plan over the counter. No accounts receivable are carried except as to the instalment accounts.

The present system is entirely unsatisfactory, and you are called in to help them revise it wherever necessary. From an inspection of the records, which are kept by one bookkeeper, and from other sources of information, the facts given below are deducted.

As to Cash Receipts. Cash is received from: (1) cash sales, (2) new accounts, (3) payments on account, (4) repair work, (5) miscellaneous sources. Cash as received is entered upon a daily loose-leaf blotter ruled as follows, reading from left to right: Number of Account; Name; Cash on Account; Article Sold; Cash Sales; Charge Sales; Cash on Charge Sales; Merchandise Returned by Customer; Merchandise Purchased; Merchandise Paid; Expenses. This blotter is totaled daily, and the totals transferred to a bound summary book which is totaled monthly. The cash as received each day is placed in a cash drawer, under the charge of the bookkeeper.

As to Cash Payments. Cash payments are made both by check and in currency as fancy dictates. The payments are entered daily upon the blotter and summarized in the monthly record book. Deposits are made infrequently whenever the cash remaining on hand appears excessive for current use.

As to Purchases. Goods are bought subject to discount, the discount received varying from 5% to 10%, and the discount period varying from 10 to 60 days. Often the discount is not taken advantage of; again, a 30- or 60-day note may be given in

payment of a bill, interest being included in the face thereof. Invoices, when received, are checked against both the goods and the purchase order, upon the receipt of the goods, after which they are entered directly into the creditors' ledger, full information being included therein in the explanation space relative to discount terms. If goods have not been received at the time the invoices arrive, the latter are placed in a suspense file there to await the arrival of the goods. After entry upon the ledger, the invoices are filed in a box file marked "unpaid invoices." When an invoice is paid, it is removed from this latter file, marked paid, and then is placed in a separate file, that of paid bills. Entry of the cash paid is then made upon the daily blotter in the column "merchandise paid."

As to Sales. Sales are made upon both the instalment plan and for cash. Daily sales average: cash $175; instalments, new, $125; repair work $60; cash received on account $200. Watches, rings, and other jewelry and, in fact, everything but repair work, are sold on the instalment plan, the customer making an initial payment of $1, and contracting to pay $1 each week thereafter until all payments are completed.

When an instalment sale is made, a tickler card is filled out, containing information as to customer's name, address, references, article bought, cost in code, sale price, payments, balance due. Likewise, a loose-leaf ledger sheet is made out for insertion in the instalment ledger; on the back of this sheet is a contract form which is signed by the customer. When a contract has been paid in full, the sheet relative thereto is drawn from the ledger and returned to the customer.

No collectors are employed, it being the policy of the firm that all instalment payments must be made at the store. It is believed to be to the firm's advantage to get a customer into the store as often as possible so that when he has paid his current bill in full he will have seen some other article that he wants and take out another contract therefor.

Losses on account of bad debts average about 15% of sales made. When a customer becomes delinquent, he is advised thereof by means of a series of collection letters; if these prove to be unsuccessful, the account is turned over to a firm of attorneys and, when absolutely hopeless, it is considered a bad debt.

As to Expenses. Expenses of running the business are for rent, heat, light, janitor service, clerical salaries, water, towel service, telephone service, telegrams, advertising, printing and stationery, state and local taxes, and so forth, all of which now are recorded under one heading of Expenses, when paid.

As to Luxury Taxes. The prices charged customers include the federal luxury taxes. Every article sold for cash upon which a tax must be paid is entered directly after sale, at sale price, in a memorandum book, in which are indicated the date, the kind of article, and sale price. On instalment goods, an entry is made in this book only when an instalment sale has been fully paid. The total of all these entries is secured monthly, and the monthly tax is computed thereon. The amount of such tax averages $150 a month.

As to Repair Work. All repair work is not done in the store, everything to be repaired, except watches, being sent outside. Each job is placed in a manila envelope containing a number in the upper right-hand corner, the job number. Each envelope contains a small card having on it the same number as is on the envelope; this card is given to the customer for the purpose of identifying the goods when the latter are called for. Each job sent out of the store is entered in a memorandum book, in which are shown, for each job, its number, name of owner, article, date promised, date received, and to whom sent for repairs.

As to Employees. The two partners devote their entire time to the business. Mr. David has charge of the accounts, does the buying, and assists in the selling. Mr. Foley has charge of the advertising, and assists in the selling. They both hire and fire the help. Mr. David signs all checks. A Mr. Jones has charge of the instalment accounts and the work in connection therewith, in which he is assisted by a Miss Mills. The bookkeeper and cashier, working directly under the supervision of Mr. David, is Miss Lowry; she is not an experienced bookkeeper, but is intelligent and of maturity. The repair man is Mr. Nichols.

Miscellaneous. An average stock of goods of about $30,000 is carried. The fixtures and store equipment represent an investment of about $3,000.

Requirements:

A. 1. Assume first that the work you will do is not to exceed $75 in cost. You must, therefore, use whatever material is now available; you cannot contemplate the hiring of any more employees, and whatever new forms you advocate should, as much as possible, be readily obtainable at a stationer's store. The revised system is to be on the double entry basis.

2. The work done by you is to cover: (1) classification of accounts; (2) rulings of all new forms; (3) all necessary instructions covering the handling of the needed accounts and forms.

3. You are to start the system at the beginning of the next current month, but you are not to go back and bring up the work of the current year to date; the bookkeeper is to do that. On the first of next January the new ledger is to be opened.

B. Assume the same conditions as above, except that the partners have consented to make whatever changes are necessary in personnel to permit of the keeping of a perpetual inventory record of merchandise. Likewise, they agree to pay you not in excess of $125 for the work you do for them.

C. Assume the same conditions as above, except that the partners, in writing, have given you carte blanche to go ahead and reorganize their system in every particular according to your own desires. Assume the business is growing by leaps and bounds and that the system you install must be so expandable that it will operate successfully five years from today as well as today. Assume, also, that your fee will be whatever you wish to make it. In connection with your report, which should be written exactly as you would hand it to the partners, include an organization chart, a chart of all forms and records to be used, showing their relation one to the other; likewise, include a bill for your services. Assume further that you are to open the books, start the system, teach the office how to operate it, and supervise the work for a month or so. Include in your report a list of office appliances which you would recommend to facilitate the work.

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26 MY 11 May
31 MY 16 May
1 Je
1 Je OCT 31 1939
2 Je
2 Je 11 Dec
10 Je 12 Dec
2 Mr 23 Mar
16 Mr 31 Mar
13 MY 22 Apr
23 MY 13 May
25 MY
31 MY JAN. 17 '62
27 M
20 Ap
12 Jl
12 Jl